DOCUMENT RESUME

ED 193 509 CE 026 975

TITLE A Guide to Task Analysis for Competency Based Education. Trade and Technical Programs. Task Linkage Project Publication No. 2.
INSTITUTION Georgia State Univ., Atlanta. School of Education.
SPONS AGENCY Georgia State Dept. of Education, Atlanta. Div. of Vocational Education.
PUB DATE Jul 80
NOTE 230p.: Some pages may not reproduce well due to light print. For related documents see CE 026 976-978.

EDRS PRICE MF01/PC10 Plus Postage.
DESCRIPTORS Building Trades: Competence: *Competency Based Education: Cosmetology: *Curriculum Development: Drafting: Electrical Occupations: Food Service Occupations: Graphic Arts: Job Analysis: *Job Skills: Metal Working: *Occupational Information: Postsecondary Education: Program Development: Secondary Education: *Trade and Industrial Education: Transportation

ABSTRACT

Developed through synthesis and review of existing task analysis literature, this guide lists tasks expected to be performed by workers in nine trade and industrial occupations and presents information for incorporating these tasks into articulated secondary and postsecondary competency based vocational education programs. Task listings are presented for the following occupational clusters: building construction, cosmetology, drafting occupations, electro-mechanical occupations, electronics, food service occupations, graphic arts, metal working occupations, and transportation. Tasks are listed by suggested instructional sequence with various program exit points noted by job title. An introduction and five appendixes discuss using these task lists for program development. The appendixes cover the following topics: an overview of competency based education: the relationship of duties, tasks, performance objectives, and criterion referenced measures: understanding duties, tasks, and procedural steps in competency based instruction: completers, leavers, and the concept of multiple career options (discussion of organizing a curriculum which allows students to take only a portion of an instructional sequence and still be a program completer by federal guidelines) and a model for curriculum organization. A bibliography follows. (MN)

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A GUIDE TO TASK ANALYSIS FOR COMPETENCY BASED EDUCATION

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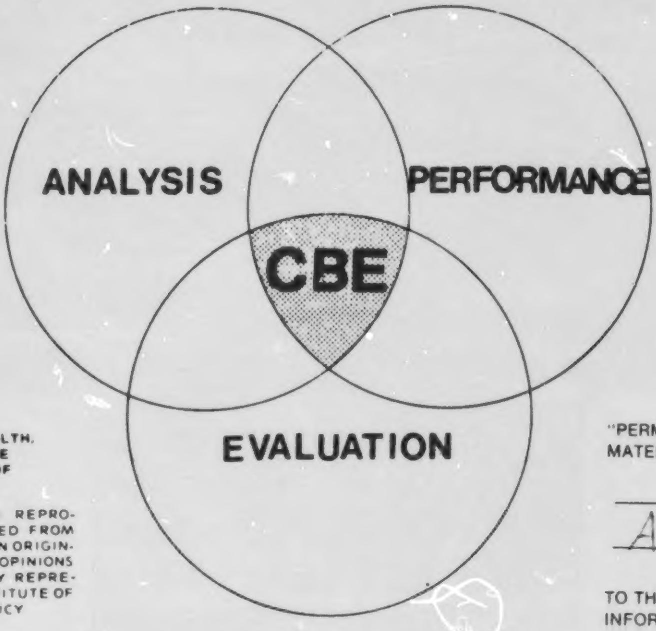
TRADE AND TECHNICAL PROGRAMS



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CE 026975

Vocational and Career Development
College of Education
Georgia State University

Task Linkage Project
Publication No. 2
July 1980

Funded By
Georgia State Department of Education
Office of Vocational Education

TRADE AND INDUSTRIAL PROGRAMS

Developed by the
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The Task Linkage Project would like to credit the following educators with the coordination and development of the task analysis material contained in this publication.

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Peter Robichaud
Donnie Clements

Appliance Servicing

Raymond Harris
Donnie Clements

Auto Mechanics

Phillip Croft
Ken Griffin
Charles Losh

Auto Body Repair

Coleman Castellaw
Lester Ranew

Aviation Mechanics

Frank Gassett

Carpentry

Dan Cochran
John Collum
Steve Higgins

Diesel Mechanics

Robert Sherrill
Leroy Turner

Drafting & Design

Bill Leathers
Roy Rucks
Fred Thomason

Electrical Technology

Kenneth Kent
William Pfautz
Buddy Seymour
Leroy Skinner

Electrical Wiring

George Ingalls
Lynn Popham

Electro-Mechanical Technology

James Bugg
James Laikam

Electronics Technology

Bill Anderson
Tom Harrison
Marion Byrdwell

Graphic Arts

Leon Roper

Industrial Electricity

Joel Pitts

Industrial Electronics

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Machine Shop

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Masonry

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Plumbing

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Welding

Alvin Cagle
Ben Williams

Trade and Industrial Programs

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Trade and Industrial Programs

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Introduction

This document was developed pursuant to a grant from the Georgia Department of Education and is designed to provide the foundation data for a task-based curriculum in a number of occupational training areas. The first section and several appendices will deal with the relationships between the data presented here and the development of a performance or competency based educational program.

Resources and Methods

This material was developed through a process of synthesis and review of the existing task analysis literature. The task documents provided by the Vocational Technical Education Consortium of States (V-TECS) as cited in the bibliography provided much of the original data necessary for development of the task lists as they appear here. The validation of the task lists as truly being those performed by incumbent workers was established by this method of beginning with data that had already been through the rigid and thorough analysis of these workers employed by V-TECS. This material was presented to teams of secondary and post-secondary teachers in each curriculum area who were recommended by State Department of Education staff and selected teacher trainers and educators as being among the most competent in their area of specialization. These teams were used to organize and refine the material into the format utilized in this publication.

Uses

There are several key needs of vocational curriculum development which are attended to by the task analysis materials which follow this introduction. The uses of this material are summarized below:

1. Content Validity--By utilizing existing task analyses this project began with a series of worker tasks which had already been validated by incumbent workers in each category. The instructors who revised and modified these materials insured that the tasks as presented represent realistic instructional areas for which specific performance objectives may be written. The material is therefore both useable in the world of work and "teachable" in the typical vocational program in our state.
2. Curriculum Organization--The task lists as presented have been placed in a suggested teaching sequence. This sequence is based on the judgment of the team who prepared the list. The sequence may be altered as deemed appropriate in local situations, but it does represent a logical ordering of both duties and tasks which may be translated directly into the classroom situation.
3. Multiple Career Options--Each task list is broken down by a series of job titles within each occupational domain. These job titles are for the most part, recognized by the Dictionary of Occupational Titles and the U. S. Department of Labor. The progress from

least skill required to most skill required with necessary tasks identified for each title. These career options or "exit points" may be used to design a curriculum which is open-ended. It allows a student in any program to be declared a completer when he has demonstrated mastery of the tasks necessary for any one of the series of exit points. (NOTE: It should be mentioned that in some highly technical programs, such as Medical Technology, there are few if any recognized exit points short of the certificated level attainable only at the conclusion of the entire program. This restriction is due to the licensing requirements of these various areas.) The utilization of multiple exit points is applicable to reporting procedures required by the Management Information System of the State Department of Education. If students complete any one of the exit points it may be assumed that the student's educational objective has been met. This is consistent with Federal definitions of program completer. (See Appendix D.)

4. Delineation of Secondary and Post-secondary Programs--These task lists are organized into secondary and post-secondary expectancies in terms of exit point possibilities. Suggested exit points are given for programs at each level. The high school program could utilize the tasks associated with exit points from several of the specialized programs as the foundation for a cluster course which has well-defined competency levels and

which has specific job titles associated with it. The suggested high school exit points in no way limit the dimensions of high school training. They are only benchmarks against which secondary programs can evaluate occupational training goals in terms of real job possibilities. Each secondary program is encouraged to set realistic task-based training goals for itself.

HOW TO USE THIS BOOK

The task lists prepared here cover a number of programs and are arranged by clusters of related occupations. These are construction, drafting, electronics, health occupations, business education, electro-mechanical, food services, metals and transportation. Each list is preceded by a summary of tasks by exit point. Each cluster of lists is related to an existing high school program and each specific list represents a post-secondary program. The elements and uses of these lists are as follows:

1. Occupational Area--

   This corresponds to a specialized training program presently being taught in technical schools in Georgia. This should be used to identify task lists for curriculum development in these specific programs.

2. Related Secondary Cluster--

   This specifies the high school cluster program to which the specialized area is most logically related. This designation should be used to relate areas of high school instruction to areas of post-secondary instruction.

3. Possible Exit Points--

   The exit points associated with task list begin with jobs with least skill required and progress to the highest skill required for any title. Virtually all exit points are identified by code numbers from the Dictionary of Occupational Titles. Tasks necessary for student competence in each exit point are indicated in matrix form by an X. These exit points should be used to define curriculum for programs which offer a series of career options short of the most technically demanding occupation in any area.

4. Duty Area--

   All task lists are broken down in to broad functional areas of worker responbility called duties. These duties follow the format established by V-TECS and are further defined in Appendix A. Duty areas are given in a suggested sequence of instruction and should be used to form the topical outline for a course of study.

5. Task Statements--

   Each task statement is phrased using V-TECS terminology. The tasks are arranged in a suggested teaching sequence. Tasks may be identified by duty area such as A-1, B-3, C-5, etc. Task statements should be used to form the performance content of a program of instruction. Individual users are encouraged to write performance objectives and criterion measures for each task as per examples given in Appendix B.

6. Secondary Expectancy--
   This element graphically identifies the tasks associated with suggested secondary exit points mentioned on the summary sheet. This designation allows for the general high school curriculum content to be rapidly identified.

SAMPLE

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)

1 REFRIGERATION, HEATING & AIR CONDITIONING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICS 3

DUTY ______________ ____

4 *DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME 5	AIR CONDITIONING INSTALLER DOMESTIC	AIR CONDITIONING INSTALLER HELPER	AIR CONDITIONING SERVICER WINDOW UNIT	REFRIGERATION MECHANIC	AIR CONDITIONING TECHNICIAN		
	DOT NO.	827.464-010	637.687-010	637.261-010	637.261-026	007.181-010		
	DUTY A -- Installing Domestic Air Conditioning Systems							
1	Tap, thread, and replace threads 6				X	X		
2	Soft and silver solder copper tubing	X	X		X	X		
3	Maintain refrigeration manifold gauges	X	X		X	X		
4	Install and use refrigeration gauges	X			X	X		
5	Use a vacuum pump	X	7		X	X		
6	Test refrigeration systems for leaks	X			X	X		
7	Install refrigeration accessories				X	X		
8	Charge refrigeration systems	X			X	X		
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19	Install package units (residential and mobile home)	X			X	X		

2 POSSIBLE EXIT POINTS — DOT DESCRIPTION

LEGEND

1. AREA TECH SCHOOL PROGRAM NAME.
2. SPECIFIC D.O.T. JOB TITLES.
3. HIGH SCHOOL CLUSTER PROGRAM NAME.
4. INDICATES TASK WHICH SHOULD BE MASTERED BY AN AVERAGE HIGH SCHOOL STUDENT.
5. BROAD AREA OF WORKER RESPONSIBILITY.
6. TASK STATEMENTS.
7. INDICATES TASK PERFORMED BY EACH JOB TITLE.

BUILDING CONSTRUCTION

SUMMARY OF MULTIPLE CAREER OPTIONS IN CARPENTRY

Secondary	-	Carpenter Helper	860.664-014
		Carpenter II	860.681-010
		Rough Carpenter	860.381-042
Post Secondary	-	Carpenter Helper	860.664-014
		Carpenter II	860.681-010
		Rough Carpenter	860.381-042
		Roofer	860.381-010
		Maintenance Carpenter	860.281-010
		Carpenter	860.381-022

- Task Summary -

Carpenter Helper. (The carpenter helper might perform tasks other than those indicated here under the direction of an experienced carpenter. This job title generally involves those persons involved in on-the-job training.) Task #'s: A-7-10, B-2, B-9, B-12-13, C-2, C-4-8, C-10, D-3, E-13-14, E-17-23, E-28, F-1, F-3, F-5, F-7, F-9-12, G-1-3.

Carpenter II. Task #'s: A-1-10, B-1-11, C-1-13, D-1-5, E-1-16, E-18-29, F-1-11, G-1, G-4-11.

Rough Carpenter. Task #'s: A-5-10, B-1-12, C-1-[illegible], [illegible]-1-5, E-1-12, E-14-16, E-18-29, F-1-11, G-1.

Roofer. Task #'s: A-8, E-1-29, G-1.

Maintenance Carpenter. Task #'s" A-8, B-1-12, C-1-10, D-1-5, E-1-11, G-1, G-4-11.

Carpenter. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) CARPENTRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIC: CARPENTER HELPER DOT NO.: 860.664-014	CARPENTER II 860.681-010	ROUGH CARPENTER 860.381-042	ROOFER 860.381-010	MAINTENANCE CARPENTE 860.281-010	CARPENTER 860.381-022	
	DUTY A -- Preparing Building Site							
* 1	Read and interpret blueprints		X				X	
* 2	Locate building lines		X				X	
* 3	Establish floor level		X				X	
* 4	Erect batter boards		X				X	
* 5	Locate footings		X	X			X	
* 6	Locate piers		X	X			X	
* 7	Dig footings	X	X	X			X	
* 8	Estimate needed material	X	X	X	X	X	X	
* 9	Pour concrete footings	X	X	X			X	
* 10	Construct foundation walls	X	X	X			X	
	DUTY B -- Installing Flooring System							
* 1	Cut sills		X	X		X	X	
* 2	Install sills	X	X	X		X	X	
* 3	Cut beams and girders		X	X		X	X	
* 4	Install beams and girders		X	X		X	X	
* 5	Lay out floor joist spacing		X	X		X	X	
* 6	Cut floor joists		X	X		X	X	
* 7	Install floor joists		X	X		X	X	
* 8	Cut bridging		X	X		X	X	
* 9	Install bridging	X	X	X		X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) CARPENTRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTION: CARPENTER HELPER DOT NO.: 860.664-014	CARPENTER II 860.681-010	ROUGH CARPENTER 860.381-042	ROOFER 860.381-010	MAINTENANCE CARPENTER 860.281-010	CARPENTER 860.381-022	
* 10	Cut special framing (stairwell, etc.)		X	X		X	X	
* 11	Install special framing		X	X		X	X	
* 12	Install sub-flooring	X	X	X		X	X	
* 13	Trim sub-flooring	X					X	
	DUTY C -- Installing Walls and Frames							
* 1	Lay out plate lines		X	X		X	X	
* 2	Install plates	X	X	X		X	X	
* 3	Lay out studs and rough openings and plates		X	X		X	X	
* 4	Cut and assemble corners	X	X	X		X	X	
* 5	Cut and assemble T-posts	X	X	X		X	X	
* 6	Cut and assemble headers	X	X	X		X	X	
* 7	Raise walls	X	X	X		X	X	
* 8	Double plate walls	X	X	X		X	X	
* 9	Plumb walls		X	X		X	X	
* 10	Install corner bracing	X	X	X		X	X	
* 11	Install trimmers		X	X			X	
* 12	Install cripples		X	X			X	
* 13	Install rough sills		X	X			X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) CARPENTRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY ______

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: CARPENTER HELPER	CARPENTER II	ROUGH CARPENTER	ROOFER	MAINTENANCE CARPENTE	CARPENTER
	DOT NO.	860.664-014	860.681-010	860.381-042	860.381-010	860.281-010	860.381-022
	DUTY D -- Installing Ceiling System						
* 1	Lay out ceiling spacing		X	X		X	X
* 2	Cut ceiling joists		X	X		X	X
* 3	Install ceiling joists	X	X	X		X	X
* 4	Install catwalk		X	X		X	X
* 5	Install deadwood		X	X		X	X
	DUTY E -- Building and Installing Roofing Systems						
* 1	Lay out ridge pole		X	X	X	X	X
* 2	Cut ridge pole		X	X	X	X	X
* 3	Lay out common rafters		X	X	X	X	X
* 4	Cut common rafters		X	X	X	X	X
* 5	Lay out hip and valley rafters		X	X	X	X	X
* 6	Cut hip and valley rafters		X	X	X	X	X
* 7	Lay out jack rafters		X	X	X	X	X
* 8	Cut jack rafters		X	X	X	X	X
* 9	Lay out frame rake		X	X	X	X	X
* 10	Cut dormers		X	X	X	X	X
* 11	Cut frame rake		X	X	X	X	X
* 12	Install roof decking		X	X	X		X
* 13	Trim decking	X			X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) CARPENTRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION	CARPENTER HELPER	CARPENTER II	ROUGH CARPENTER	ROOFER	MAINTENANCE CARPENTER	CARPENTER	
		DOT NO.	860.664-014	860.681-010	860.381-042	860.381-010	860.281-010	860.381-022	
* 14	Install roof belt		X	X	X	X		X	
* 15	Install gable ends			X	X	X		X	
* 16	Install louvers			X	X	X		X	
* 17	Install gable sheathing		X			X			
* 18	Install ridge pole		X	X	X	X		X	
* 19	Install common rafters		X	X	X	X		X	
* 20	Install hip and valley rafters		X	X	X	X		X	
* 21	Install jack rafters		X	X	X	X		X	
* 22	Install dormers		X	X	X	X		X	
* 23	Install frame rake		X	X	X	X		X	
* 24	Lay out gable frame			X	X	X		X	
* 25	Cut gable frame			X	X	X		X	
* 26	Install gable frame			X	X	X		X	
* 27	Install drip edge flashing			X	X	X		X	
* 28	Lay out and install asphalt shingles		X	X	X	X		X	
* 29	Install roof caps and vents			X	X	X		X	
	DUTY F -- Installing Exterior Finish and Insulation								
* 1	Install sheathing		X	X	X			X	
* 2	Install doors			X	X			X	
* 3	Install door hardware		X	X	X			X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) CARPENTRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTI DOT NO.	CARPENTER HELPER 860.664-014	CARPENTER II 860.681-010	ROUGH CARPENTER 860.381-042	ROOFER 860.381-010	MAINTENANCE CARPENT 860.281-010	CARPENTER 860.381-022	
* 4	Install windows			X	X			X	
* 5	Install window hardware		X	X	X			X	
* 6	Construct cornice			X	X			X	
* 7	Install exterior wall finish		X	X	X			X	
* 8	Apply siding			X	X			X	
* 9	Install blanket and batt insulation		X	X	X			X	
*10	Install rigid insulation		X	X	X			X	
*11	Install loose insulation		X	X	X			X	
*12	Install vapor barrier		X					X	
	DUTY G -- Installing Interior Trim								
* 1	Install underlayment		X	X	X	X	X	X	
* 2	Apply ceiling board		X					X	
* 3	Apply wall board		X					X	
* 4	Set doors			X			X	X	
* 5	Install interior trim			X			X	X	
* 6	Install interior hardware			X			X	X	
* 7	Install cabinets and build-ins			X			X	X	
* 8	Install balustrade			X			X	X	
* 9	Install finished flooring			X			X	X	
* 10	Apply wall paneling			X			X	X	
* 11	Install stair risers and treads			X			X	X	

SUMMARY OF MULTIPLE CAREER OPTIONS IN RESIDENTIAL WIRING

Secondary	-	Electrician Helper	829.684-022
Post Secondary	-	Electrician Helper	829.684-022
		Electrician	824.261-010

- Task Summary -

Electrician Helper. Task #'s: A-1-7, B-1-4, B-6, D-2-5, E-6-15, F-2, F-6.

Electrician. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) RESIDENTIAL WIRING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: ELECTRICIAN HELPER DOT NO.: 829.684-022	DOT DESCRIPTIO: ELECTRICIAN DOT NO.: 824.261-010
	DUTY A -- Installing Temporary Service		
* 1	Install meter base (temporary)	X	X
* 2	Install temporary mast and weatherhead	X	X
* 3	Install temporary ground	X	X
* 4	Install 110V outlet	X	X
* 5	Install 220V outlet	X	X
* 6	Install main disconnect	X	X
* 7	Install wiring from weatherhead to outlets	X	X
	DUTY B -- Installing Residential Service		
* 1	Install meter base	X	X
* 2	Assemble and install mast and weatherhead	X	X
* 3	Install grounding electrode	X	X
* 4	Install service entrance cable	X	X
5	Locate and mount main service panel		X
* 6	Install lead-in cable from meter base to main panel	X	X
	DUTY C -- Installing Ceiling, Wall, Special Outlet Boxes		
1	Locate ceiling boxes		X
2	Locate wall boxes		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) RESIDENTIAL WIRING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTION: ELECTRICIAN HELPER DOT NO.: 829.684-022	DOT DESCRIPTION: ELECTRICIAN DOT NO.: 824.261-010					
3	Locate special outlet boxes		X					
* 4	Install ceiling boxes	X	X					
* 5	Install wall boxes	X	X					
* 6	Install special outlet boxes	X	X					
	DUTY D -- Installing Wiring Circuits							
1	Determine types and size of circuits		X					
* 2	Pull wiring for lighting circuits	X	X					
* 3	Pull wiring for switch circuits	X	X					
* 4	Pull wiring for special outlet circuits	X	X					
* 5	Pull wiring for receptacle circuits	X	X					
6	Read and interpret electrical blueprint		X					
7	Calculate total service loads		X					
8	Determine branch service overcurrent protection		X					
9	Apply NEC to installation and wiring used		X					
10	Calculate machine service loads		X					
	DUTY E -- Installing Low Voltage Controls							
1	Locate thermostat position		X					
2	Locate doorbell and chimes		X					
3	Locate smoke detector		X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
RESIDENTIAL WIRING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO DOT NO.	ELECTRICIAN HELPER 829.684-022	ELECTRICIAN 824.261-010
4	Locate intercom system			X
5	Locate burglar alarm system			X
* 6	Mount base for thermostat		X	X
* 7	Mount base for doorbell and chimes		X	X
* 8	Mount base for smoke detector		X	X
* 9	Mount base for intercom		X	X
*10	Mount base for burglar alarm system		X	X
*11	Install wiring for thermostat		X	X
*12	Install wiring for doorbell and chimes		X	X
*13	Install wiring for smoke detector		X	X
*14	Install wiring for intercom		X	X
*15	Install wiring for burglar alarm system		X	X
16	Mount and wire low voltage transformer			X
	DUTY F -- Install Breakers and Wire Main Breaker Panel			
1	Determine proper size breaker for each circuit			X
* 2	Install circuit breakers		X	X
3	Identify and connect each circuit to the appropriate circuit breaker			X
* 4	Install main service panel disconnect switch		X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) RESIDENTIAL WIRING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS	
	DOT DESCRIPTION	ELECTRICIAN HELPER	ELECTRICIAN
TASK NO.	TASK NAME / DOT NO.	829.684-022	824.261-010
* 5	Connect service entrance cable to main disconnect switch	X	X
* 6	Install and connect grounded fault interrupter circuit breaker	X	X
	DUTY G -- Wiring Switches, Receptacles, Lights and Special Outlets		
1	Wire switches in 110V circuit		X
2	Wire 2-3 way switches in 110V circuit		X
3	Wire 110V circuit controlled from three separate locations		X
4	Wire 110V circuit controlled from four separate locations		X
5	Wire dimmer switch in 110V circuit		X
6	Wire convenience outlets in 110V circuit		X
7	Wire holders for incandescent lights		X
8	Wire fixtures for flourescent lights		X
9	Wire grounded fault interrupter in 110V circuit receptacle		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) RESIDENTIAL WIRING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS	
	DOT DESCRIPTION	ELECTRICIAN HELPER	ELECTRICIAN
	DOT NO.	829.684-022	829.261-010
TASK NO.	TASK NAME		
	DUTY H -- Wiring Special Circuits		
1	Connect receptacles in 220V circuits for hot water heater		X
2	Connect receptacles in 220V circuits for range		X
3	Connect receptacles in 220V circuits for clothes dryer		X
4	Connect doorbells and chimes in low voltage circuit		X
5	Connect thermostat to wiring and mount to base		X
6	Connect and install smoke detector		X
7	Connect and install burglar alarm		X
8	Connect and install intercom		X

SUMMARY OF MULTIPLE CAREER OPTIONS IN MASONRY

Secondary	-	Cement Mason Helper	869.687-026
		Bricklayer Helper	861.687-010
		Stone Mason Helper	869.687-026
Post Secondary	-	Cement Mason Helper	869.687-026
		Bricklayer Helper	861.687-010
		Stone Mason Helper	869.687-026
		Cement Mason	844.369-010
		Stone Mason	861.381-038
		Bricklayer, Construction	863.381-018

- Task Summary -

Cement Mason Helper. Task #'s: A-2-5, B-2-5, B-8-9, B-11-12, B-14-15, B-17-18, C-3, C-5, C-8, D-6, D-21.

Bricklayer Helper. Task #'s: A-2, A-4-6, B-2, B-4-5, B-8-9, B-11-12, B-14-15, B-17-18, C-3, C-5, C-8, D-1, D-6, D-21-23.

Stone Mason Helper. Task #'s: A-3, A-4-6, C-1, C-3, C-5, C-7, C-8, C-11, D-1, D-6.

Cement Mason. Task #'s: A-1-6, A-8, B-1-18, C-1, C-3, C-5, C-8, C-10, D-1, D-6, D-11, D-21, D-26.

Stone Mason. Task #'s: A-1-2, A-4-5, A-7-8, C-3-5, C-7-8, C-10-11, D-1, D-6, D-13, D-26, D-32.

Bricklayer, Construction. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MASONRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTIO CEMENT MASON HELPER	BRICKLAYER HELPER	STONE MASON HELPER	CEMENT MASON	STONE MASON	BRICKLAYER CONSTRUCT	
		DOT NO. 869.687-026	861.687-010	869.687-026	844.369-010	861.381-038	863.381-018	
	DUTY A -- Preparing Footings and Foundations							
* 1	Inspect grading at building site			X	X	X	X	
* 2	Finish grading at building site	X	X	X	X	X	X	
* 3	Set frames for footing/foundations	X			X		X	
* 4	Set expansion joint	X	X	X	X	X	X	
* 5	Install steel reinforcement	X	X	X	X	X	X	
* 6	Make measurement checks with mason rule		X	X	X		X	
7	Check spacing with brick spacing rule					X	X	
8	Estimate needed masonry materials				X	X	X	
	DUTY B -- Preparing, Paving and Finishing Concrete							
1	Lay out slabs				X		X	
* 2	Make concrete	X	X		X		X	
* 3	Test concrete	X			X		X	
* 4	Pour concrete slabs	X	X		X		X	
* 5	Finish concrete slabs	X	X		X		X	
6	Tuck point joints in concrete				X		X	
7	Lay out concrete patios				X		X	
* 8	Pour concrete patios	X	X		X		X	
* 9	Finish concrete patios	X	X		X		X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MASONRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTION	CEMENT MASON HELPER	BRICKLAYER HELPER	STONE MASON HELPER	CEMENT MASON	STONE MASON	BRICKLAYER CONSTRUCT
	DOT NO.	869.687-026	861.687-010	869.687-026	844.369-010	861.381-038	863.381-018
TASK NO.	TASK NAME						
10	Lay out concrete driveways				X		X
* 11	Pour concrete driveways	X	X		X		X
* 12	Finish concrete driveways	X	X		X		X
13	Lay out concrete steps				X		X
* 14	Pour concrete steps	X	X		X		X
* 15	Finish concrete steps	X	X		X		X
16	Lay out concrete walks				X		X
* 17	Pour concrete walks	X	X		X		X
* 18	Finish concrete walks	X	X		X		X
	DUTY C -- Constructing Chimneys and Fireplaces						
* 1	Stock bricks for wall		X	X	X		X
2	Lay a stretcher bond brick wall 4" - 8" - 12"						X
* 3	Mix mortar manually	X	X	X	X	X	X
4	Cup and spread mortar					X	X
* 5	Build scaffolding	X	X	X	X	X	X
6	Lay corners in running bonds 4" - 8" - 12"						X
* 7	Install lintels over openings in chimneys		X	X		X	X
* 8	Clean masonry	X	X	X	X	X	X
* 9	Clean brick walls		X				X
10	Read and interpret blueprints				X	X	X
* 11	Finish mortar joints		X	X		X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MASONRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTION	CEMENT MASON HELPER	BRICKLAYER HELPER	STONE MASON HELPER	CEMENT MASON	STONE MASON	BRICKLAYER CONSTRUCT
	DOT NO.	869.687-026	861.687-010	869.687-026	844.369-010	861.381-038	863.381-018
TASK NO.	TASK NAME						
	DUTY D -- Constructing Buildings						
* 1	Cut brick or block with masonry saw	X	X	X	X	X	X
2	Lay stretcher bond blockwall						X
	4" - 6" - 8" - 12"						X
3	Construct common bond 4" brick 8" block wall						X
4	Lay corners in running bands 4" - 4" - 12"						X
5	Construct 10" cavity walls 4" block 4" brick						X
* 6	Mix mortar mechanically	X	X	X	X	X	X
7	Construct brick veneer walls using corner						
	poles						X
8	Construct rowlock sills						X
9	Construct soldier course wall						X
10	Construct brick arches						X
11	Install lintels over openings in walls				X		X
12	Construct glaze tile walls						X
13	Construct stone walls					X	X
14	Construct brick piers						X
15	Lay English bond 4" - 8" - 12"						X
16	Lay Flemish bond 4" - 8" - 12"						X
17	Lay Dutch corners 4" - 8" - 12"						X
18	Lay English corners 4" - 8" - 12"						X
19	Lay corners in stacked bond						X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MASONRY

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIO	CEMENT MASON HELPER	BRICKLAYER HELPER	STONE MASON HELPER	CEMENT MASON	STONE MASON	BRICKLAYER CONSTRUCT	
	DOT NO.	869.687-026	861.687-010	869.687-026	844.369-010	861.381-038	863.381-018	
TASK NO.	TASK NAME							
20	Construct 8" stacked bond brick wall						X	
* 21	Waterproof brick or block walls	X	X		X		X	
* 22	Set window frames in brick walls		X				X	
* 23	Set window frames in block walls		X				X	
24	Lay out brick patios						X	
25	Construct brick patios						X	
26	Construct masonry panels				X	X	X	
27	Mix terazzo						X	
28	Pour and cure terazzo						X	
29	Grind and finish terazzo						X	
30	Tuck point joints in terazzo						X	
31	Set pre-cast terazzo panels						X	
32	Construct stone arches					X	X	

SUMMARY OF MULTIPLE CAREER OPTIONS IN PLUMBING

Secondary	-	Pipe Cutter	862.682-010
		Pipe-Fitters Helper	826.684-022
		Plumbing Assembler-Installer	862.684-026
Post Secondary	-	Pipe Cutter	862.684-010
		Pipe-Fitters Helper	826.684-022
		Plumbing Assembler-Installer	862.684-026
		Plumber	862.381-010
		Pipe-Fitter	862.381-018

- Task Summary -

Pipe Cutter. (This job title may be thought of as a plumbers helper.) Task #'s: A-1-2, A-5-10, A-16, A-18, A-21, A-24-26, C-2, C-12, C-14-15, D-5, D-12-13, D-15, D-16, G-9-11.

Pipe-Fitter Helper. Task #'s: A-1-2, A-7-10, D-1, I-4-15.

Plumbing Assembler-Installer. Task #'s: A-1-26, B-2-4, C-2-3, C-6, C-8-11, D-5, D-7, E-2-3, F-2, G-1-12, H-1-7, I-1-2, I-4-15.

Plumber. All Tasks.

Pipe-Fitter. Task #'s: A-1-3, A-5-10, A-14-28, B-1, C-1-9, C-11-16, D-2-4, D-6-7, D-11-18, F-1-2, G-1-12, H-1-7, I-1-15, J-1-3, K-1-5.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) PLUMBING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: PIPE CUTTER DOT NO.: 862.682-010	DOT DESCRIPTION: PIPE FITTER HELPER DOT NO.: 862.684-022	DOT DESCRIPTION: PLUMBING ASSEMBLER-INSTALLER DOT NO.: 862.684-026	DOT DESCRIPTION: PLUMBER DOT NO.: 862.381-030	DOT DESCRIPTION: PIPE FITTER DOT NO.: 862.381-018	
	DUTY A -- Joining Pipe						
* 1	Bend copper tubing with spring bender	X	X	X	X	X	
* 2	Bend steel pipe	X	X	X	X	X	
3	Braze pipe with gas torch and filler metal				X	X	
* 4	Join cast-iron soil pipe, using lead and oakum			X	X		
* 5	Cut cast-iron soil pipe with snap-type chain cutter	X		X	X	X	
* 6	Cut concrete pipe	X			X	X	
* 7	Cut copper tubing and pipe with hacksaw	X	X	X	X	X	
* 8	Cut copper tubing and pipe with tubing cutter	X	X	X	X	X	
* 9	Cut steel pipe with 4-wheel pipe cutter	X	X	X	X	X	
*10	Cut steel pipe with one-wheel cutter	X	X	X	X	X	
*11	Join cast-iron pipe to clay pipe			X	X		
*12	Wipe clay pipe joints			X	X		
*13	Join clay pipe with couplings			X	X		
*14	Join copper tubing to brass pipe			X	X	X	
*15	Join copper tubing/pipe to copper pipe/tubing			X	X	X	
*16	Join copper tubing/pipe to plastic pipe, using sweat method	X		X	X	X	
*17	Join copper tubing to steel pipe			X	X	X	
*18	Join copper tubing with compressed connectors	X		X	X	X	
*19	Join pipe with no-hub or band clamp couplings			X	X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) PLUMBING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION / DOT NO.	PIPE CUTTER 862.682-019	PIPE FITTER HELPER 862.684-022	PLUMBING ASSEMBLER-INSTALLER 862.684-026	PLUMBER 862.381-030	PIPE FITTER 862.381-018	
*20	Join plastic pipe to cast-iron pipe with no-hub couplings				X	X	X	
*21	Join plastic pipe using solvent cement method		X		X	X	X	
*22	Join plastic pipe to steel pipe				X	X	X	
*23	Join steel pipe to cast-iron pipe with no-hub couplings				X	X	X	
*24	Thread steel pipe with adjustable die		X		X	X	X	
*25	Thread steel pipe with non-adjustable die		X		X	X	X	
*26	Thread steel pipe with power-driven vise stand		X		X	X	X	
27	Join pipe with electric arc welder and filler metal						X	
28	Weld pipe with oxyacetylene torch and filler material						X	
	DUTY B -- Installing Hangers and Supports							
1	Install pipe sleeves or thimbles through walls, ceilings, or floors					X	X	
* 2	Secure with hangers horizontal and vertical lines of pipe to masonry surfaces				X	X		
* 3	Secure with hangers horizontal and vertical lines of pipe to metal surfaces				X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) PLUMBING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	PIPE CUTTER	PIPE FITTER HELPER	PLUMBING ASSEMBLER-INSTALLER	PLUMBER	PIPE FITTER
	DOT NO.	862.682-010	862.684-[illegible]	862.684-026	862.381-030	862.381-018
* 4	Secure with hangers horizontal and vertical lines of pipe to wood surfaces			X	X	
	DUTY C -- Building Water Distribution Lines					
1	Install booster pumps in water supply lines				X	X
* 2	Install cut-off valves	X		X	X	X
* 3	Install cut-off valve in stop-and-waste box			X	X	X
4	Install expansion joints				X	X
5	Install hot or cold water storage tanks				X	X
* 6	Install lawn sprinkler systems			X	X	X
7	Repair make-up water components on water cooling towers				X	X
* 8	Install pressure relief valves			X	X	X
* 9	Install water circulating pumps			X	X	X
*10	Insulate water lines			X		
*11	Make water pressure tests on water supply systems			X	X	X
*12	Rough-in water supply lines for bathtubs	X			X	X
13	Rough-in water supply lines for wall-mounted urinals				X	X
*14	Rough-in water supply lines for water closets	X			X	X
*15	Rough-in water supply lines for water heaters	X			X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) PLUMBING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTION / DOT NO.	PIPE CUTTER 862.682-010	PIPE FITTER HELPER 862.684-022	PLUMBING ASSEMBLER-INSTALLER 862.684-026	PLUMBER 862.381-030	PIPE FITTER 862.381-018	
16	Lay out trench lines					X	X	
	DUTY D -- Building Drains							
* 1	Backfill trenches			X		X		
2	Calculate the slope required for building sewer lines					X	X	
3	Install drain pipe in trenches					X	X	
4	Establish grade lines for installing plumbing					X	X	
* 5	Install cleanouts on drains		X		X	X		
6	Install float valves on water cooling towers					X	X	
* 7	Install overflow pipes on water cooling towers				X	X	X	
8	Install septic tanks					X		
9	Install storm drains					X		
10	Lay out house drains					X		
11	Make water tests on building drains					X	X	
*12	Rough-in waste lines and vents for bathtubs		X			X	X	
*13	Rough-in waste lines and vents for built in lavatories		X			X	X	
14	Rough-in waste lines and vent lines for dishwashers					X	X	
*15	Rough-in waste and vent lines for floor-mounted water closets		X			X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) PLUMBING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	DOT DESCRIPTION	PIPE CUTTER	PIPE FITTER HELPER	PLUMBING ASSEMBLER-INSTALLER	PLUMBER	PIPE FITTER	
	DOT NO.	862.682-010	862.684-022	862.684-026	862.381-030	862.381-018	
	TASK NAME						
* 16	Rough-in waste lines for shower baths	X			X	X	
17	Rough-in waste lines for wall-mounted urinals				X	X	
18	Prepare a tripod and transit level for use				X	X	
	DUTY E -- Installing Traps and Cleanouts						
1	Install acid-proof traps				X		
* 2	Install garbage disposal units			X	X		
* 3	Install grease interceptors in waste lines			X	X		
4	Install waste sinks for food-handling equipment				X		
	DUTY F -- Installing Vents						
1	Install soil or waste back vents				X	X	
* 2	Install vent terminals (roof-flashing)			X	X	X	
	DUTY G -- Installing Fixtures						
* 1	Install build-in lavatories			X	X	X	
* 2	Install dishwashers			X	X	X	
* 3	Install drinking fountains			X	X	X	
* 4	Install electric water heaters			X	X	X	
* 5	Install flush value-type water closets			X	X	X	
* 6	Install gas water heaters			X	X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) PLUMBING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY ____________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	PIPE CUTTER	PIPE FITTER HELPER	PLUMBING ASSEMBLER-INSTALLER	PLUMBER	PIPE FITTER		
	DOT NO.	862.682-010	862.684-022	862.684-026	862.381-030	862.381-018		
* 7	Install Washing machines			X	X	X		
* 8	Install shower bath accessories in ceramic tile baths			X	X	X		
* 9	Install tank-type water closets	X		X	X	X		
*10	Install bathtubs	X		X	X	X		
*11	Install wall-mounted lavatories	X		X	X	X		
*12	Install wall-mounted urinals			X	X	X		
	DUTY H -- Installing Hot Water/Steam Systems							
1	Install water system components for hot water heating coils				X	X		
2	Install temperature and pressure relief valves on boilers				X	X		
3	Install check valves on water feed lines				X	X		
4	Install package boilers				X	X		
5	Install strainers in condensate return lines				X	X		
6	Join branch mains to main steam piping				X	X		
7	Perform leak tests on gas supply lines				X	X		
	DUTY I -- Maintaining Plumbing Systems							
1	Clean and adjust gas burners				X	X		
2	Check steam pressures for boiler malfunctions				X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) PLUMBING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS						
TASK NO.	TASK NAME	DOT DESCRIPTION DOT NO.	PIPE CUTTER 862.682-010	PIPE FITTER HELPER 862.684-022	PLUMBING ASSEMBLER-INSTALLER 862.684-026	PLUMBER 862.381-030	PIPE FITTER 862.381-018	
3	Clean deposits from boilers					X	X	
* 4	Clear obstructions from lavatory drains			X	X	X	X	
* 5	Remove obstructions from main drain lines			X	X	X	X	
* 6	Remove obstructions from water closet drains			X	X	X	X	
* 7	Replace lavatory trap drains			X	X	X	X	
* 8	Repair leaking shower valves			X	X	X	X	
* 9	Repair leaking water faucets or valves			X	X	X	X	
*10	Repair water flush valves on water closets			X	X	X	X	
*11	Clean steam pressure regulator valves			X	X	X	X	
*12	Install a prefabricated air chamber			X	X	X	X	
*13	Replace pressure control switches on water pumps			X	X	X	X	
*14	Replace a section of galvanized water supply line			X	X	X	X	
*15	Thaw frozen pipes			X	X	X	X	
	DUTY J -- Organizing and Planning							
1	Determine local requirements for plumbing system contracts					X	X	
2	Compute the costs for plumbing supplies					X	X	
3	Determine performance standards for tasks					X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) PLUMBING

RELATED SECONDARY CLUSTER BUILDING CONSTRUCTION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	PIPE CUTTER	PIPE FITTER HELPER	PLUMBING ASSEMBLER-INSTALLER	PLUMBER	PIPE FITTER	
	DOT NO.	862.682-010	862.684-022	862.684-026	862.381-030	862.381-018	
TASK NO.	TASK NAME						
	DUTY K -- Inspecting/Evaluating						
1	Size water supply systems				X	X	
2	Evaluate tasks performed for compliance with work standards				X	X	
3	Evaluate individuals for promotion				X	X	
4	Evaluate procedures for storage or inventory of plumbing fixtures and supplies				X	X	
5	Take inventory of plumbing fixtures and supplies				X	X	

COSMETOLOGY

SUMMARY OF MULTIPLE CAREER OPTIONS IN COSMETOLOGY

Secondary	-	Shampooer	No D.O.T.
		Manicurist	No D.O.T.
		(It is assumed that this typical high school student does not spend enough contact hourse in the program to meet the licensing requirement for a cosmetologist.)	
Post Secondary	-	Shampooer	No D.O.T.
		Manicurist	No D.O.T.
		Cosmetologist	332.271-010

Task Summary -

Shampooer. Task #'s: B-1-3, C-1-3, F-1-2, F-4, H-1-5, L-1-2.

Manicurist. Task #'s: J-1-3, L-1-2.

Cosmetologist. Task #'s: All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) COSMETOLOGY

RELATED SECONDARY CLUSTER COSMETOLOGY

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

DOT DESCRIPTION

TASK NO.	TASK NAME	SHAMPOOER	MANICURIST	COSMETOLOGIST				
	DOT NO.	**	**	332.271-010				
	DUTY A -- Performing Supervisory Functions							
1	Order supplies			X				
2	Maintain customer appointment records			X				
	DUTY B -- Mixing and Sanitizing Equipment							
* 1	Mix water base hair care solutions	X		X				
* 2	Mix permanent hair color	X		X				
* 3	Perform wet sanitizing procedure	X		X				
	DUTY C -- Shampooing and Rinsing Hair							
* 1	Give plain shampoo	X		X				
* 2	Shampoo lightened hair	X		X				
* 3	Give special rinses	X		X				
	DUTY D -- Cutting and Shaping Hair							
1	Give a basic scissors cut			X				
2	Give a razor cut			X				
3	Layer-cut hair			X				
4	Slither hair			X				
5	Shingle hair			X				
6	Thin hair with razor			X				
7	Thin hair with thinning shears			X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) COSMETOLOGY

RELATED SECONDARY CLUSTER COSMETOLOGY

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	SHAMPOOER	MANICURIST	COSMETOLOGIST				
	DOT NO.	**	**	332.271-010				
TASK NO.	TASK NAME							
	DUTY E -- Setting and Combing Hair into Style							
1	Give a finger wave			X				
2	Give a marcel wave			X				
3	Make pin curls			X				
4	Make roller curls			X				
5	Comb hair into style			X				
6	Blow-style hair			X				
7	Mechanically straighten hair with heat			X				
	DUTY F -- Bleaching and Tinting Hair							
* 1	Perform skin sensitivity test	X		X				
* 2	Apply hair toners	X		X				
3	Apply semi-permanent hair tint			X				
* 4	Apply temporary rinse	X		X				
5	Apply permanent hair tint			X				
6	Remove artificial color			X				
7	Lighten hair			X				
8	Apply bleach for retouch			X				
9	Frost hair			X				
10	Streak hair			X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) COSMETOLOGY

RELATED SECONDARY CLUSTER COSMETOLOGY

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS					
	DOT DESCRIPTION	SHAMPOOER	MANICURIST	COSMETOLOGIST			
TASK NO.	TASK NAME / DOT NO.	**	**	332.271-010			
	DUTY G -- Curling and Relaxing Hair						
1	Give a cold wave			X			
2	Perform chemical relaxation of hair			X			
	DUTY H -- Treating Special Scalp Conditions						
* 1	Condition damaged hair	X		X			
* 2	Massage scalp manually	X		X			
* 3	Treat dandruff	X		X			
* 4	Treat dry scalp	X		X			
* 5	Treat oily scalp	X		X			
	DUTY I -- Cleaning and Styling Wigs and Hairpieces						
1	Apply tint to wigs and hairpieces			X			
2	Cut wig			X			
3	Clean wigs and hairpieces with cleaning fluid			X			
4	Clean wigs and hairpieces with shampoo			X			
5	Comb hairpieces and wigs into style (hairpieces)			X			
6	Comb hairpieces and wigs into style (wigs)			X			
7	Set wigs and hairpieces			X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) COSMETOLOGY

RELATED SECONDARY CLUSTER COSMETOLOGY

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTIO	SHAMPOOER	MANICURIST	COSMETOLOGIST				
		DOT NO.	**	**	332.271-010				
	DUTY J -- Manicuring and Pedicuring Nails								
* 1	Give plain manicure			X	X				
* 2	Give oil manicure			X	X				
* 3	Make nail repair			X	X				
	DUTY K -- Giving Facial Treatments								
1	Arch eyebrows				X				
2	Tint eyebrows				X				
3	Tint eyelashes				X				
	DUTY L -- Keeping Records								
* 1	Record patron services in personal file		X	X	X				
* 2	Record needed supplies		X	X	X				
3	Renew individual cosmetology license				X				

DRAFTING OCCUPATIONS

SUMMARY OF MULTIPLE
CAREER OPTIONS IN
DRAFTING AND DRAFTING DESIGN OCCUPATIONS

Secondary	-	Drafter Assistant	017.281-018
		Detailer	017.261-018
		Drafter, Mechanical	007.281-010
Post Secondary	-	Drafter Assistant	017.281-018
		Detailer	017.261.018
		Drafter, Mechanical	007.281-010
		Drafter, Architectural	001.281-010
		Drafter, Civil	005.281-010

- Task Summary -

Drafter Assistant. Task #'s: A-1-8, B-1-2, D-1-3.

Detailer. Task #'s: A-1-8, B-1-2, C-1-7, D-1-3, E-1-3.

Drafter, Mechanical. Task #'s: A-1-8, B-1-2, C-1-7, D-1-10, E-1-5, F-1-5, G-1-4, H-1-6.

Drafter, Architectural. Task #'s: A-1-8, B-1-2, C-1-7, D-1-3, D-6-10, E-1, G-1-4, I-1-3, J-1-4, K-1-7.

Drafter, Civil. Task #'s: A-1-8, B-1-2, C-1-7, D-1-3, D-6-10, E-1, G-1-4, I-1-3, J-1-4, K-5-6.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DRAFTING/DRAFTING DESIGN TECHNOLOGY

RELATED SECONDARY CLUSTER DRAFTING

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS — DOT DESCRIPTION	DRAFTER ASSISTANT	DETAILER	DRAFTER, MECHANICAL	DRAFTER, ARCHITECTUR	DRAFTER, CIVIL		
TASK NO.	TASK NAME / DOT NO.	017.281-018	017.261-018	007.281-010	001.281-010	005.281-010		
	DUTY A -- Preparing Finished Drawings							
* 1	Maintain working station and storage area	X	X	X	X	X		
* 2	Store drawings/prints	X	X	X	X	X		
* 3	Run prints	X	X	X	X	X		
* 4	Trace drawings in pencil	X	X	X	X	X		
* 5	Ink drawings	X	X	X	X	X		
* 6	Prepare a drawing of a graph	X	X	X	X	X		
* 7	Prepare a drawing of a chart	X	X	X	X	X		
* 8	Letter presentations and drawings with guides and other methods	X	X	X	X	X		
	DUTY B -- Multi-View Drawings							
* 1	Prepare a stingle view detail drawing	X	X	X	X	X		
* 2	Prepare a multi-view detail drawing	X	X	X	X	X		
	DUTY C -- Sectional View Drawings							
* 1	Prepare multiview drawing with full section view		X	X	X	X		
* 2	Prepare multiview drawing with half section view		X	X	X	X		
* 3	Prepare multiview drawing with broken out section view		X	X	X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DRAFTING/DRAFTING DESIGN TECHNOLOGY

RELATED SECONDARY CLUSTER DRAFTING

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	DRAFTER ASSISTANT	DETAILER	DRAFTER, MECHANICAL	DRAFTER, ARCHITECTU	DRAFTER, CIVIL
	DOT NO.	017.281-018	017.261-018	007.281-010	001.281-010	005.281-010
TASK NO.	TASK NAME					
* 4	Prepare multiview drawing with revolved section view		X	X	X	X
* 5	Prepare multiview drawing with removed section view		X	X	X	X
* 6	Prepare multiview drawing with offset section view		X	X	X	X
* 7	Prepare multiview drawing with aligned section view		X	X	X	X
	DUTY D -- Pictorial Drawing					
* 1	Prepare an isometric drawing	X	X	X	X	X
* 2	Prepare a pictorial freehand sketch	X	X	X	X	X
* 3	Prepare a technical illustration	X	X	X	X	X
* 4	Prepare a dimetric drawing			X		
* 5	Prepare a trimetric drawing			X		
* 6	Prepare a cavalier drawing			X	X	X
* 7	Prepare a cabinet drawing			X	X	
* 8	Prepare a parallel perspective			X	X	X
* 9	Prepare a two-point perspective			X	X	
* 10	Prepare a three-point perspective			X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DRAFTING/DRAFTING DESIGN TECHNOLOGY

RELATED SECONDARY CLUSTER DRAFTING

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT NO. / DOT DESCRIPTION: 017.281-018 DRAFTER ASSISTANT	017.261-018 DETAILER	007.281-010 DRAFTER, MECHANICAL	001.281-010 DRAFTER, ARCHITECTUR	005.281-010 DRAFTER, CIVIL		
	DUTY E -- Preparing Assembly Drawings							
* 1	Prepare a general assembly drawing		X	X	X	X		
* 2	Prepare a sub-assembly drawing		X	X				
* 3	Prepare an exploded illustration of an assembly drawing		X	X				
* 4	Prepare an installation assembly drawing			X				
* 5	Revise/change an assembly drawing			X				
	DUTY F -- Developments							
* 1	Prepare a development incorporation of a rectangular prism			X				
* 2	Prepare a development incorporation of a cylinder			X				
* 3	Prepare a development incorporation of a pyramid			X				
* 4	Prepare a development incorporation of a cone			X				
* 5	Prepare a development incorporation of any shape			X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DRAFTING/DRAFTING DESIGN TECHNOLOGY

RELATED SECONDARY CLUSTER DRAFTING

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO DOT NO.	DRAFTER ASSISTANT 017.281-018	DETAILER 017.261-018	DRAFTER, MECHANICAL 007.281-010	DRAFTER, ARCHITECTUR 001.281-010	DRAFTER, CIVIL 005.281-010		
	DUTY G -- Intersections								
* 1	Prepare an intersection of ruled surfaces				X	X	X		
* 2	Prepare an intersection of ruled to double curved surfaces				X	X	X		
* 3	Prepare an intersection of double curved curved surfaces				X	X	X		
* 4	Prepare an intersection and development				X	X	X		
	DUTY H -- Detail Drawings								
* 1	Prepare a detail working drawing including specifications for threaded fasteners				X				
* 2	Prepare a detail working drawing including specifications for keys and pins				X				
* 3	Prepare a detail working drawing including specifications for rivets				X				
* 4	Prepare a detail working drawing including specifications for springs				X				
* 5	Prepare a detail working drawing including specifications for gears				X				
* 6	Prepare a detail working drawing including specifications for cams				X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DRAFTING/DRAFTING DESIGN TECHNOLOGY

RELATED SECONDARY CLUSTER DRAFTING

DUTY ____________

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS					
	DOT DESCRIPTION	DRAFTER ASSISTANT	DETAILER	DRAFTER, MECHANICAL	DRAFTER, ARCHITECTURA	DRAFTER, CIVIL	
	DOT NO.	017.281-018	017.261-018	007.281-010	001.281-010	005.281-010	
	DUTY I -- Structural Drawings (These tasks are typically taught only in drafting design technology at the post-secondary level.)						
1	Prepare a structural steel framing plan				X	X	
2	Prepare a structural sheet detail drawing				X	X	
3	Prepare a drawing of a concrete pier detail				X	X	
	DUTY J -- Plumbing Drawings (These tasks are typically taught only in drafting design technology at the post-secondary level.)						
1	Prepare a drawing of a single line plumbing diagram				X	X	
2	Prepare a drawing of a double line plumbing diagram				X	X	
3	Prepare a drawing of a scale drawing of a plumbing application				X	X	
4	Prepare a pictorial drawing of a plumbing diagram				X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DRAFTING/DRAFTING DESIGN TECHNOLOGY

RELATED SECONDARY CLUSTER DRAFTING

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DRAFTER ASSISTANT	DETAILER	DRAFTER, MECHANICAL	DRAFTER, ARCHITECTUR	DRAFTER, CIVIL	
	DOT DESCRIPTION / DOT NO.	017.281-018	017.261-018	007.281-010	001.281-010	005.281-010	
	DUTY K -- Residential Dwellings (These tasks are typically taught only in drafting design technology at the post-secondary level.)						
1	Prepare a drawing of a residential foundation				X		
2	Prepare a drawing of a residential floor plan				X		
3	Prepare a drawing of a residential elevator plan				X		
4	Prepare a drawing of a residential type detail sheet				X		
5	Prepare a drawing of a residential plot plan				X	X	
6	Prepare a drawing of a residential site plan				X	X	
7	Prepare a full set of plans for a residence				X		

ELECTRO-MECHANICAL

SUMMARY OF MULTIPLE CAREER OPTIONS IN REFRIGERATION, HEATING, & AIR CONDITIONING

Secondary	-	Air Conditioning Installer-Helper	827.464-010
		Air Conditioning Installer Domestic	637.687-010
		Air Conditioning Servicer Window Unit	637.261-026
Post Secondary	-	Air Conditioning Installer-Helper	827.464-010
		Air Conditioning Installer Domestic	637.687-010
		Air Conditioning Servicer Window Unit	637.261-026
		Refrigeration Mechanic	637.261-026
		Air Conditioning Technician	007.181-010

- Task Summary -

Air Conditioner Installer-Helper. Task #'s: A-1-3, A-6-7, A-12-13, A-17.

Air Conditioning Installer-Domestic. Task #'s: A-2-6, A-8-11, A-14-26, B-1, B-3-6, B-11, B-15-22, C-1-3.

Air Conditioning Servicer, Window Unit. Task #'s: A-1-19.

Refrigeration Mechanic. Task #'s: A-1-26, B-1-22, C-1-19, D-1-12.

Air Conditioning Technician. Task #'s: All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) REFRIGERATION, HEATING & AIR CONDITIONING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICS

DUTY ______________________________

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*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	AIR CONDITIONING INSTALLER DOMESTIC	AIR CONDITIONING INSTALLER HELPER	AIR CONDITIONING SERVICER WINDOW UNIT	REFRIGERATION MECHANIC	AIR CONDITIONING TECHNICIAN		
TASK NO.	TASK NAME / DOT NO.	827.464-010	637.687-010	637.261-010	637.261-026	007.181-010		
	DUTY A -- Installing Domestic Air							
	Conditioning Systems							
* 1	Tap, thread, and replace threads		X	X	X	X		
* 2	Soft and silver solder copper tubing	X	X	X	X	X		
* 3	Maintain refrigeration manifold gauges	X	X	X	X	X		
* 4	Install and use refrigeration gauges	X		X	X	X		
* 5	Use a vacuum pump	X		X	X	X		
* 6	Test refrigeration systems for leaks	X	X	X	X	X		
* 7	Install refrigeration accessories		X	X	X	X		
* 8	Charge refrigeration systems	X		X	X	X		
* 9	Read schematic diagrams to install A/C systems	X			X	X		
* 10	Run electrical circuits	X		X	X	X		
* 11	Wire split phase motors	X		X	X	X		
* 12	Install and test a transformer		X	X	X	X		
* 13	Install and test contacts and relays		X	X	X	X		
* 14	Install and check thermostats	X		X	X	X		
* 15	Install and check miscellaneous controls	X		X	X	X		
* 16	Wire split system air conditioners	X		X	X	X		
* 17	Install window A/C units	X	X	X				
* 18	Install condensate drains	X		X	X	X		
* 19	Install package units (residential and mobile							
	home)	X	X	X	X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
REFRIGERATION, HEATING & AIR CONDITIONING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICS

DUTY ______

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTION / DOT NO.	AIR CONDITIONING INSTALLER DOMESTIC 827.464-010	AIR CONDITIONING INSTALLER HELPER 637.687-010	AIR CONDITIONING SERVICER WINDOW UNIT 637.261-010	REFRIGERATION MECHANIC 637.261-026	AIR CONDITIONING TECHNICIAN 007.181-010		
*20	Install split systems		X			X	X		
*21	Install add-on split systems		X			X	X		
*22	Install electrical circuits for heat pumps		X			X	X		
*23	Install electrical furnaces		X			X	X		
*24	Check gas sources		X	X		X	X		
*25	Vent heat systems		X	X		X	X		
*26	Install controls		X	X		X	X		
	DUTY B -- Installing Commercial Air Conditioning Systems								
* 1	Install and use refrigeration gauges for commercial systems		X			X	X		
2	Install refrigeration accessories for commercial systems					X	X		
* 3	Test commercial refrigeration system for leaks		X			X	X		
* 4	Charge commercial refrigeration systems		X			X	X		
* 5	Run electrical circuits for commercial systems		X			X	X		
* 6	Wire split phase meters for commercial refrigeration systems		X			X	X		
7	Install a commercial transformer					X	X		
8	Test a commercial transformer					X	X		
9	Install contacts and relays for an A/C system					X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
REFRIGERATION, HEATING, & AIR CONDITIONING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICS

DUTY ______________________________

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*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: AIR CONDITIONING INSTALLER DOMESTIC	AIR CONDITIONING INSTALLER HELPER	AIR CONDITIONING SERVICER WINDOW UNIT	REFRIGERATION MECHANIC	AIR CONDITIONING TECHNICIAN		
	DOT NO.	827.464-010	637.687-010	637.261-010	637.261-026	007.181-010		
10	Test contacts and relays for a commercial system				X	X		
* 11	Install and check thermostats for a commercial system	X			X	X		
12	Install and check pressure switches				X	X		
13	Check for overloads				X	X		
14	Troubleshoot magnetic starters				X	X		
* 15	Install condensate drains in commercial systems	X			X	X		
* 16	Install split systems (commercial)	X			X	X		
* 17	Install add-on split systems (commercial)	X			X	X		
* 18	Install electrical circuits for heat pumps in commercial systems	X			X	X		
* 19	Install commercial electrical furnaces	X			X	X		
* 20	Check for gas sources (commercial)	X			X	X		
* 21	Determine combustion efficiency	X			X	X		
* 22	Install controls for commercial systems	X			X	X		
	DUTY C -- Repairing and Maintaining Electrical Systems Controls							
* 1	Read schematic diagrams to service electrical systems	X			X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
REFRIGERATION, HEATING & AIR CONDITIONING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICS

DUTY ______________________________

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*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	AIR CONDITIONING INSTALLER DOMESTIC	AIR CONDITIONING INSTALLER HELPER	AIR CONDITIONING SERVICER WINDOW UNIT	REFRIGERATION MECHANIC	AIR CONDITIONING TECHNICIAN		
	DOT NO.	827.464-010	637.687-010	637.261-010	637.261-026	007.181-010		
TASK NO.	TASK NAME							
2	Service shaded pole motors				X			
* 3	Troubleshoot a PSC (capacitor run) motor	X			X	X		
* 4	Troubleshoot a CS motor	X			X	X		
5	Troubleshoot a CSR motor				X	X		
6	Service a three phase motor				X	X		
7	Maintain electrical motors				X	X		
8	Test transformers				X	X		
9	Service thermostats				X	X		
10	Check pressure switches				X	X		
11	Test for overloads				X	X		
12	Troubleshoot electrical control systems				X	X		
13	Troubleshoot compressor burn out in window A/C				X	X		
14	Check and repair fans and fan motors in commercial and domestic units				X	X		
15	Adjust and repair defrost controls				X	X		
16	Troubleshoot air/repair heat pumps' refrigeration cycle				X	X		
17	Troubleshoot electric furnaces				X	X		
18	Service electric controls on gas heating system				X	X		
19	Service blower, nozzle, motor and coupling				X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
REFRIGERATION, HEATING & AIR CONDITIONING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICS

DUTY ______________________________

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*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS							
	DOT DESCRIPTION	AIR CONDITIONING INSTALLER DOMESTIC	AIR CONDITIONING INSTALLER HELPER	AIR CONDITIONING SERVICER WINDOW UNIT	REFRIGERATION MECHANIC	AIR CONDITIONING TECHNICIAN		
TASK NO.	TASK NAME / DOT NO.	827.464-010	637.687-010	637.261-010	637.261-026	007.181-010		
	DUTY D -- Repairing and Maintaining the Refrigeration Cycle							
1	Test compressors				X	X		
2	Repair or replace compressors				X	X		
3	Check and repair condensors				X	X		
4	Check and repair evaporators				X	X		
5	Check and repair automatic expansion valves				X	X		
6	Replace automatic expansion valves				X	X		
7	Check and replace capillary tubes				X	X		
8	Check and repair/replace thermostatic expansion valves				X	X		
9	Troubleshoot refrigeration systems				X	X		
10	Evacuate the heat pump				X	X		
11	Install reversing valves (refrigeration cycle)				X	X		
12	Change the heat pump				X	X		
	DUTY E -- Calculating the Heat Loss and Gain							
1	Use heat charts to calculate loss or gain					X		
2	Use of sling sychrometer to calculate loss or gain					X		
3	Use designed temperature charts to calculate loss or gain					X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
REFRIGERATION, HEATING & AIR CONDITIONING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: AIR CONDITIONING INSTALLER DOMESTIC DOT NO.: 827.464-010	AIR CONDITIONING INSTALLER HELPER 637.687-010	AIR CONDITIONING SERVICER WINDOW UNIT 637.261-010	REFRIGERATION MECHANIC 637.261-026	AIR CONDITIONING TECHNICIAN 007.181-010		
4	Select the proper insulation for heat loss or gain					X		
5	Read blue prints					X		

SUMMARY OF MULTIPLE
CAREER OPTIONS IN APPLIANCE
SERVICING

Secondary	-	Appliance Service Helper	637.080-010
		Household Appliance Installer	827.661-010
		Washing Machine Servicer	827.281-010
Post Secondary	-	Appliance Service Helper	637.080-010
		Household Appliance Installer	827.661-010
		Washing Machine Servicer	827.281-010
		Appliance Repairer	723.584-010
		Appliance Servicer	827.261-010

- Task Summary -

Appliance Service Helper. (The appliance service helper might perform tasks other than those indicated here, under the direction of an experienced service man. This job title generally refers to those individuals who are involved in on-the-job training.) Task #'s: A-1, A-2, A-8, A-12, A-13, B-1, B-5, B-12, B-21, B-23, B-25, D-1-3, E-2-7, E-12, E-30.

Household Appliance Installer. Task #'s: A-1-15, B-1, D-8-10.

Washing Machine Servicer. Task #'s" A-13, B-1, B-3-6, B-12, B-16, B-21-22, B-24-25, D-6-10, E-1-12, E-15-17, E-19-21, E-27-30, E-32-35.

Appliance Repairer. Task #'s: B-1-27, E-25.

Appliance Servicer. Task #'s: All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) APPLIANCE SERVICING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS						
		DOT DESCRIPTIO						
		APPLIANCE SERVICE HELPER	HOUSEHOLD APPLIANCE INSTALLER	WASHING MACHINE SERVICER	APPLIANCE REPAIRER	APPLIANCE SERVICER		
TASK NO.	TASK NAME	DOT NO. 637.080-010	827.661-010	827.281-010	723.584-010	827.261-010		
	DUTY A -- Installing Appliances							
* 1	Install window air conditioners	X	X			X		
* 2	Install trash compactor		X			X		
* 3	Install dishwasher	X	X			X		
* 4	Install gas dryer		X			X		
* 5	Install electric dryer		X			X		
* 6	Install electric oven		X			X		
* 7	Install electric range		X			X		
* 8	Install gas oven	X	X			X		
* 9	Install gas range		X			X		
* 10	Install icemaker		X			X		
* 11	Install microwave oven		X			X		
* 12	Install refrigerator	X	X			X		
* 13	Install clothes washer	X	X	X		X		
* 14	Install gas water heater		X			X		
* 15	Install electric water heater		X			X		
	DUTY B -- Maintaining and Repairing Electrical Systems and Controls							
* 1	Splice wires	X	X	X	X	X		
2	Adjust and calibrate thermostats				X	X		
3	Replace thermostats				X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) APPLIANCE SERVICING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTIO	APPLIANCE SERVICE HELPER	HOUSEHOLD APPLIANCE INSTALLER	WASHING MACHINE SERVICER	APPLIANCE REPAIR	APPLIANCE SERVICER		
	DOT NO.	637.080-010	827.661-010	827.281-010	723.584-010	827.261-010		
TASK NO.	TASK NAME							
* 4	Check switches			X	X	X		
* 5	Replace switches	X		X	X	X		
* 6	Check and service timers			X	X	X		
7	Replace dial timers				X	X		
8	Replace clock timer				X	X		
9	Check capillary sensors				X	X		
10	Replace capillary sensors				X	X		
11	Replace burner and ignition controls				X	X		
* 12	Check/replace wires	X		X	X	X		
13	Check/replace resistors				X	X		
14	Check/replace diodes				X	X		
15	Check/replace capacitors				X	X		
* 16	Check/replace motors			X	X	X		
17	Check/replace heaters				X	X		
18	Check/replace heating elements				X	X		
19	Check/replace coils				X	X		
20	Check/replace transformers				X	X		
* 21	Check/replace fuses	X		X	X	X		
* 22	Check/replace breakers			X	X	X		
* 23	Check/replace lamps and lamp sockets	X			X	X		
* 24	Check/replace relays			X	X	X		
* 25	Check/replace solenoids	X		X	X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) APPLIANCE SERVICING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS — DOT DESCRIPTION: APPLIANCE SERVICE HELPER DOT NO.: 637.080-010	HOUSEHOLD APPLIANCE INSTALLER 827.661-010	WASHING MACHINE SERVICER 827.281-010	APPLIANCE REPAIRER 723.584-010	APPLIANCE SERVICER 827.261-010
26	Replace condensor				X	X
27	Trouble shoot electrical problems				X	X
	DUTY C -- Maintaining and Repairing Refrigeration Units					
1	Charge refrigeration units					X
2	Evacuate refrigeration units					X
3	Test refrigeration units for leaks					X
4	Replace refrigeration system valves					X
5	Trouble shoot refrigeration units					X
	DUTY D -- Maintaining Plumbing Systems					
* 1	Adjust gas burners	X				X
* 2	Clean gas burners	X				X
* 3	Test gas lines and connections for leaks	X				X
4	Replace condensor					X
5	Replace evaporator					X
* 6	Repair copper tubing			X		X
* 7	Install copper tubing			X		X
* 8	Replace water hoses and gaskets		X	X		X
* 9	Replace filters		X	X		X
* 10	Trouble shoot plumbing systems		X	X		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
APPLIANCE SERVICING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS						
	DOT DESCRIPTIO	APPLIANCE SERVICE HELPER	HOUSEHOLD APPLIANCE INSTALLER	WASHING MACHINE SERVICER	APPLIANCE REPAIRER	APPLIANCE SERVICER		
	DOT NO.	637.080-010	827.661-010	827.281-010	723.584-010	827.261-010		
	DUTY E -- Performing Mechanical Repairs							
* 1	Adjust cams			X		X		
* 2	Adjust door latch	X		X		X		
* 3	Adjust gas orifice	X		X		X		
* 4	Install gas orifice	X		X		X		
* 5	Adjust belts	X		X		X		
* 6	Replace belts	X		X		X		
* 7	Adjust mounting/level supports	X		X		X		
* 8	Adjust clutch			X		X		
* 9	Replace clutch			X		X		
*10	Service transmission			X		X		
*11	Repair or replace transmission			X		X		
*12	Clean coils and air filter	X		X		X		
*13	Install range hood					X		
14	Install vent					X		
*15	Replace agitator			X		X		
*16	Replace center post tub gasket			X		X		
*17	Replace bell crank			X		X		
18	Replace blower assembly					X		
*19	Replace cams			X		X		
*20	Replace door gaskets	X		X		X		
*21	Replace door hardware	X		X		X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) APPLIANCE SERVICING

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTI: APPLIANCE SERVICE HELPER DOT NO.: 637.080-010	HOUSEHOLD APPLIANCE INSTALLER 827.661-010	WASHING MACHINE SERVICER 827.281-010	APPLIANCE REPAIRER 723.584-010	APPLIANCE SERVICER 827.261-010
* 22	Replace drum rollers and bearings			X		X
23	Replace fan blades and impellers					X
24	Insulate heaters					X
25	Insulate ovens				X	X
26	Replace seals					X
* 27	Replace tubs			X		X
* 28	Replace drums			X		X
* 29	Strengthen sheet metal parts			X		X
* 30	Touch up cabinets	X		X		X
31	Replace circulation motors					X
* 32	Replace drive motors			X		X
* 33	Replace gas heating element			X		X
* 34	Trouble shoot mechanical problems			X		X
* 35	Trouble shoot drive problems			X		X

SUMMARY OF MULTIPLE CAREER OPTIONS IN ELECTROMECHANICAL TECHNOLOGY

Secondary	-	None (While high school students may master some tasks in this area the skill level is not sufficient to qualify them for any of the titles listed below.)	
Post Secondary	-	Electro-Mechanical Repairer	637.261-014
		Electro-Mechanical Technician	710.281-018

- Task Summary -

Electro-Mechanical Repairer. Task #'s: A-1-13, B-1-3, C-1-11, D-1-20, E-1-10, F-3, F-6, F-12, G-1-12, J-1-17, K-2-10.

Electro-Mechanical Technician. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: ELECTRO-MECHANICAL REPAIRER DOT NO.: 637.261-014	DOT DESCRIPTIO: ELECTRO-MECHANICAL TECHNICIAN DOT NO.: 710.281-018
	DUTY A -- Interpreting Electrical and Mechanical Drawings		
1	Read mechanical drawings	X	X
2	Read and interpret building blueprints	X	X
3	Draw circuit schematics	X	
4	Draw sketches of equipment subassemblies	X	X
5	Refer to manufacturer's assembly drawings to assure proper assembly of equipment	X	X
6	Refer to parts list to determine proper assembly of parts	X	X
7	Refer to electrical drawings to determine proper wire sizes	X	X
8	Refer to electrical drawings to determine proper electrical components	X	X
9	Make sketches of proposed equipment installations	X	X
10	Transfer rough sketches to finished scale drawings	X	
11	Make sketches of equipment using isometric oblique views	X	X
12	Draw block and schematic diagrams		X
13	Make sketches using orthographics projection		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: ELECTRO-MECHANICAL REPAIRER	ELECTRO-MECHANICAL TECHNICIAN					
	DOT NO.	637.261-014	710.281-018					
	DUTY B -- Performing Manufacturing and Machining Procedures							
1	Use feeler gauge, dial indicator to make precise adjustments	X	X					
2	Inspect slides, keyways, shafts, and bearings for excess wear, improper clearance or misalignment	X	X					
3	Inspect gear teeth for excess wear, misalignment, mesh, depth	X	X					
4	Write numerical controlled programs	X	X					
5	Modify or de-bug numerical controlled programs	X	X					
6	Determine the machining to be accomplished on a part for a numerical controlled program	X	X					
7	Determine what machines and tools are to be used to perform the necessary machining on a part	X	X					
8	Refer to speed and feed tables to determine machine tool curring speeds to be used	X	X					
9	Remove or refit gears to shafts	X	X					
10	Rework the bore of a gear to restore concentricity	X	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIO	ELECTRO-MECHANICAL REPAIRER	ELECTRO-MECHANICAL TECHNICIAN
TASK NO.	TASK NAME / DOT NO.	637.261-014	710.281-018
11	Measure and adjust clearance between cam and cam follower	X	X
12	Perform slotting, milling or other operations on a milling machine	X	X
13	Perform grinding operations using a surface, centerless or other type of grinder	X	X
	DUTY C -- Determining Physical Properties of Metals		
1	Measure the physical properties of materials	X	X
2	Heat treat, anneal temper or otherwise alter the properties of a component or piece of metal	X	X
3	Chemically alter the structural or molecular properties of materials	X	X
4	Find hardness of metal using a rockwell or brinell tester	X	X
5	Observe crystal structure of metal under a microscope	X	X
6	Prepare metal speciments for metallography examination	X	X
7	Inspect heat treatment of steel	X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTIO ELECTRO-MECHANICAL REPAIRER DOT NO. 637.261-014	ELECTRO-MECHANICAL TECHNICIAN 710.281-018
8	Check quality of metals using ultrasonic or radiography testing methods	X	X
9	Test metals for impact loading	X	X
10	Determine tensile strength of metals	X	X
11	Determine elongation of metals	X	X
	DUTY D -- Designing and Troubleshooting Basic Electrical Circuits		
1	Test instruments with a voltmeter	X	X
2	Adjust instruments to meet specifications	X	X
3	Measure resistance, voltage and current using a multimeter	X	X
4	Identify resistors by color code	X	X
5	Use Kirchoff's law to analyze circuits	X	X
6	Measure the effect of capacitors in a circuit	X	X
7	Measure effect of inductors in a circuit	X	X
8	Design series and parallel resonant circuits	X	X
9	Determine the frequency response of electronic filters	X	X
10	Use resonance theory to select resonance point of a circuit	X	X
11	Compute or measure the power loss or efficiency of a transformer	X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS	
	DOT DESCRIPTIO	ELECTRO-MECHANICAL REPAIRER	ELECTRO-MECHANICAL TECHNICIAN
	DOT NO.	637.261-014	710.281-018
TASK NO.	TASK NAME		
12	Use the turns ratio theory to determine the approximate turns ratio of a transformer	X	X
13	Compute the real opposition to electrical flow	X	X
14	Perform circuit test to insure continuity or isolate excessive pressure drops	X	X
15	Measure and adjust rate of flow within an electrical circuit	X	X
16	Compute or measure the magnetic flux density within a magnetic field	X	X
17	Use a pocked or desk calculator to perform your work	X	X
18	Measure or compute resistance or capacitance of series or parallel circuits	X	X
19	Use Ohm's law to determine the values of circuit components	X	X
20	Measure leakage of a filter or coupling capacitor	X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: ELECTRO-MECHANICAL REPAIRER DOT NO.: 637.261-014	ELECTRO-MECHANICAL TECHNICIAN 710.281-018					
	DUTY E -- Servicing Motors and Controls							
1	Inspect commutator, slip rings or brush gear of motors or generators	X	X					
2	Repair or replace defective components such as switches, solenoids and relays	X	X					
3	Inspect motor controls such as centrifugal switches for a proper operation	X	X					
4	Clean and adjust motor or starter contacts	X	X					
5	Test motor windings for short circuits, grounds, or burn-outs	X	X					
6	Repair or replace defective starter or starter components	X	X					
7	Connect a dummy load to equipment under test	X	X					
8	Repair or replace shafts, bearings, seals, etc	X	X					
9	Inspect system wiring and re-solder connections	X	X					
10	Inspect, adjust, repair, or replace overload protection devices	X	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS — DOT DESCRIPTION	ELECTRO-MECHANICAL REPAIRER	ELECTRO-MECHANICAL TECHNICIAN					
TASK NO.	TASK NAME	DOT NO. 637.261-014	710.281-018					
	DUTY F -- Determining Dynamic and Static Loads on Structures							
1	Determine velocity and acceleration of objects using equations of dynamics		X					
2	Solve for loads on machine members using engineering statistics		X					
3	Convert English units of measurement to metric	X	X					
4	Compute the mechanical advantage or speed change of simple or compound level systems		X					
5	Determine the proper amount of force necessary to produce the desired operation of a machine		X					
6	Use a pocket or desk calculator to perform your work	X	X					
7	Construct vector diagrams to analyze forces, velocities and mechanical advantages of linkage systems		X					
8	Determine the increase or decrease in angular velocity due to simple or compound gear trains		X					
9	Determine centrifugal forces on structures		X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	ELECTRO-MECHANICAL REPAIRER	ELECTRO-MECHANICAL TECHNICIAN				
	DOT DESCRIPTION / DOT NO.	637.261-014	710.281-018				
10	Find acceleration forces on objects		X				
11	Find dynamic equilibrium of a system of forces		X				
12	Determine frictional forces of mechanisms	X	X				
	DUTY G -- Constructing and Testing Hydraulic and Pneumatic Systems						
1	Test system components to determine if they are functioning properly	X	X				
2	Disconnect hydraulic or pneumatic connections	X	X				
3	Inspect hydraulic or pneumatic cylinders, or pistons for wear, pitting, out-of-round	X	X				
4	Inspect hydraulic or pneumatic pumps for proper pressure and capacity	X	X				
5	Purge impurities from hydraulic or pneumatic systems	X	X				
6	Perform circuit test to insure continuity or isolate excessive pressure drops	X	X				
7	Measure or adjust rate of flow within or through a circuit	X	X				
8	Compute or measure energy storage or energy transfer in a system	X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION DOT NO.	ELECTRO-MECHANICAL REPAIRER 637.261-014	ELECTRO-MECHANICAL TECHNICIAN 710.281-018					
9	Select pressure compensating or reducing valves		X	X					
10	Diagnose probable cause of incorrect pressure differential		X	X					
11	Calculate pressure and resulting forces in hydraulic systems		X	X					
12	Select proper size of cylinders and valves for fluid systems		X	X					
	DUTY H -- Calculating Strength of Materials and Structures								
1	Determine strength of machine parts using stress equations			X					
2	Calculate deflection of structural members			X					
3	Construct shear and moment diagrams			X					
4	Use a pocket or desk calculator to perform calculations			X					
5	Use manuals to determine strength of materials			X					
6	Determine stresses in structures with aid of computer			X					
7	Calculate and design rivet and bolt connections			X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTIO	ELECTRO-MECHANICAL REPAIRER	ELECTRO-MECHANICAL TECHNICIAN					
TASK NO.	TASK NAME DOT NO.	637.261-014	710.281-018					
8	Determine strength of welds		X					
9	Calculate torsion stress in shafts		X					
10	Analyze columns for buckling		X					
11	Solve for thermal stresses		X					
	DUTY I -- Designing Machine Components							
1	Design slides, keyways, shafts and bearings		X					
2	Design clutch systems		X					
3	Calculate linkage distances of simple or compound lever systems		X					
4	Design rotary level systems, such as rocker arm assemblies or bell cranks		X					
5	Construct link point curves to analyze the operation of a linkage system		X					
6	Determine the location of centers of rotation for linkage elements		X					
7	Design gear teeth, shafts, rollers		X					
8	Determine pitch diameter, diametral pitch and other gear geometrics		X					
9	Design smooth wheel, spring, or chain drive systems		X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: ELECTRO-MECHANICAL REPAIRER DOT NO.: 637.261-014	DOT DESCRIPTIO: ELECTRO-MECHANICAL TECHNICIAN DOT NO.: 710.281-018
10	Design cam systems to perform specific types of motion, timing, and product distribution		X
	DUTY J -- Analyzing Electronic Circuits		
1	Test diodes with an ohmmeter	X	X
2	Measure electrical characteristics of transistor	X	X
3	Determine the transconductance of a transistor	X	X
4	Investigate characteristics of amplifiers	X	X
5	Design power supplies	X	X
6	Design oscillator circuits	X	X
7	Analyze wave-shaping circuits	X	X
8	Compute the efficiency of AC or DC motors	X	X
9	Design an amplifier circuit	X	X
10	Use the theory of syncor devices to troubleshoot and service syncro systems	X	X
11	Troubleshoot a clipping or other wave-shaping device	X	X
12	Analyze transistor amplifier circuits	X	X
13	Connect an oscilloscope to circuit components	X	X
14	Analyze oscilloscope waveforms to determine the type of equipment malfunctions	X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: ELECTRO-MECHANICAL REPAIR DOT NO.: 637.261-014	ELECTRO-MECHANICAL TECHNICIAN 710.281-018					
15	Determine pulse or wave duration using an oscilloscope or recording device	X	X					
16	Perform circuit tests on printed circuit boards	X	X					
17	Design or modify the design of a PC board	X	X					
18	Analyze or design impedence matching circuitry		X					
19	Use feedback theory to measure or adjust feedback values to meet equipment specifications		X					
20	Measure bias values and adjust as necessary to obtain optimum circuit output		X					
21	Inject a test signal and check circuit output to determine minimum distortion		X					
22	Measure or calculate gain of an amplifier circuit		X					
23	Plot load lines for a transistor circuit		X					
	DUTY K -- Performing Management Functions							
1	Record task results		X					
2	Maintain service records	X	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRO-MECHANICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRO-MECHANICAL

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS						
	DOT DESCRIPTIO	ELECTRO-MECHANICAL REPAIRER	ELECTRO-MECHANICAL TECHNICIAN					
TASK NO.	**TASK NAME** DOT NO.	637.261-014	710.281-018					
3	Refer to parts list or manual to determine name and part number for replacement parts	X	X					
4	Write a purchase order or requisition for parts	X	X					
5	Refer to service manual to determine the proper service calibration procedures	X	X					
6	Estimate the time and material necessary to repair defective equipment	X	X					
7	Inform the customer of the cost estimate for service or repair	X	X					
8	Write or type business letters, reports, bills, etc.	X	X					
9	Write specifications for new equipment or components	X	X					
10	Write purchase orders or equipment requisitions	X	X					

ELECTRICAL/ELECTRONICS OCCUPATIONS

SUMMARY OF MULTIPLE
CAREER OPTIONS IN
ELECTRICAL TECHNOLOGY

Secondary	-	Electric Motor Analyst	721.261-010
Post Secondary	-	Electric Motor Analyst	721.261-010
		Electric Motor Repairer	721.281-018
		Electrician	824.261-010
		Electrical Technician	003.161-010

- Task Summary -

Electric Motor Analyst. Task #'s: A-1-3, A-10, B-4-6, B-9, C-1-9, C-12-15, E-2, F-4-6, F-9.

Electric Motor Repairer. Task #'s: A-1-3, A-10, B-4-6, B-9, C-1-7, C-13-15, E-1-8, F-3-6, F-9-12.

Electrician. Task #'s: A-1-3, A-10, B-1-6, B-9-12, C-1-9, C-12-15, E-1-8, F-1-5, G-1-8, H-1-3.

Electrical Technician. Task #'s: A-1-16, B-1-16, C-1-15, D-19, E-1-9, F-1-5, G-1-8, H-3.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	ELECTRIC MOTOR ANALYS 721.261-010	ELECTRIC MOTOR REPAI 721.281-018	ELECTRICIAN 824.261-010	ELECTRICAL TECHNICIA 003.161-010		
	DOT DESCRIPTION / DOT NO.						
	DUTY A -- Operating Test Equipment						
* 1	Operate VOM to measure voltage	X	X	X	X		
* 2	Operate VOM to measure resistance	X	X	X	X		
* 3	Operate clamp-on ammeter to measure current	X	X	X	X		
4	Operate VTVM to measure voltage				X		
5	Operate VTVM to measure current				X		
6	Operate VTVM to measure resistance				X		
7	Operate oscilloscope to measure voltage				X		
8	Operate oscilloscope to measure phase angle				X		
9	Operate oscilloscope to display vaveforms				X		
* 10	Test, adjust, repair test equipment	X	X	X	X		
11	Inject test signals and measure outputs of electronic controls				X		
12	Measure gain of amplifier circuits				X		
13	Measure bias values in circuits				X		
14	Measure capacitor leakage				X		
15	Perform circuit test on PC boards				X		
16	Perform tests on IC's						
	DUTY B -- Determining Circuit Values						
1	Determine expected voltage readings from schematics			X	X		
2	Determine circuit operational sequence from schematics			X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRONICS TECHNICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: ELECTRIC MOTOR ANALYS DOT NO.: 721.261-010	ELECTRIC MOTOR REPAIR 721.281-018	ELECTRICIAN 824.261-010	ELECTRICAL TECHNICIAN 003.161-010
3	Determine expected resistance values from schematics			X	X
* 4	Determine expected voltage readings from component values	X	X	X	X
* 5	Determine expected resistance readings from component values	X	X	X	X
* 6	Determine circuit parameters using Olines law or Watt's law	X	X	X	X
7	Determine circuit parameters suing Kirchoff's law				X
8	Determine voltage values of charge and decay using time constants				X
* 9	Compute the efficiency of AC or DC motors	X	X	X	X
10	Compute the power loss of a transformer			X	X
11	Compute output voltages of transformers using turns ratio			X	X
12	Compute resistance of series or parallel circuits			X	X
13	Compute capacitance of series or parallel circuits				X
14	Plot load lines for vacuum tubes and transistors to determine proper operating range				X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION	ELECTRIC MOTOR ANALY	ELECTRIC MOTOR REPAI	ELECTRICIAN	ELECTRICAL TECHNICIA		
		DOT NO.	721.261-010	721.281-018	824.261-010	003.161-010		
15	Trace through operation of a logic circuit					X		
16	Determine gating or switching operations of a logic circuit					X		
	DUTY C -- Inspecting/Testing/Adjusting Motors/Controls							
* 1	Inspect commutators, slip rings or brush gears for proper condition		X	X	X	X		
* 2	Inspect internal motor controls such as centrifugal switches for proper operation		X	X	X	X		
* 3	Test motor windings for shorts, grounds, opens, etc.		X	X	X	X		
* 4	Inspect shafts, keyways, pulleys, gears, etc. for proper condition/alignment		X	X	X	X		
* 5	Adjust drive mechanisms for alignment and tension		X	X	X	X		
* 6	Inspect mechanical starters for correct operation		X	X	X	X		
* 7	Inspect/adjust pneumatic starters for correct operation		X	X	X	X		
* 8	Inspect magnetic starters for correct operation		X		X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ______

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS					
	DOT DESCRIPTIO	ELECTRIC MOTOR ANALYS	ELECTRIC MOTOR REPAI	ELECTRICIAN	ELECTRICAL TECHNICIAN		
TASK NO.	TASK NAME / DOT NO.	721.261-010	721.281-018	824.261-010	003.161-010		
* 9	Adjust magnetic starters for correct operation	X		X	X		
10	Inspect/test electronic controls for proper operation (i.e., speed controls)				X		
11	Adjust electronic controls				X		
* 12	Determine the efficiency of AC or DC motors using test equipment	X		X	X		
* 13	Inspect system wiring/adjust tighten, reconnect where needed	X	X	X	X		
* 14	Inspect/adjust motor mountings (i.e. shock mounts)	X	X	X	X		
* 15	Inspect/adjust overload protection devices	X	X	X	X		
	DUTY D -- Repairing Electronic Circuitry						
1	Test PC board circuitry				X		
2	Repair PC board				X		
3	Modify PC board				X		
5	Test/replace solid state components				X		
6	Troubleshoot or repair a transistor amplifier				X		
7	Repair a clipping or wave shaping device				X		
8	Modify a transistor amplifier				X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS — DOT DESCRIPTION	ELECTRIC MOTOR ANALYS	ELECTRIC MOTOR REPAIF	ELECTRICIAN	ELECTRICAL TECHNICIAN			
TASK NO.	TASK NAME — DOT NO.	721.261-010	721.281-018	824.261-010	003.161-010			
9	Replace logic gates or associated circuit component				X			
	DUTY F -- Repairing Motors or Controls							
1	Remove, repair or replace defective motor components		X	X	X			
* 2	Clean motors inside and outside	X	X	X	X			
3	Disassemble, repair and reassemble motors		X	X	X			
4	Replace motor bearings		X	X	X			
5	Replace starter contacts		X	X	X			
6	Replace overload devices		X	X	X			
7	Replace starter coils		X	X	X			
8	Replace motor gear drive and pullup		X	X	X			
9	Replace belts, couplings, or chains		X	X	X			
	DUTY F -- Installing, Replacing Motors or Controls							
1	Determine correct size and type of motor for application			X	X			
2	Determine correct starter size and type for application			X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ______________________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION	ELECTRIC MOTOR ANALY	ELECTRIC MOTOR REPAI	ELECTRICIAN	ELECTRICAL TECHNICIA		
		DOT NO.	721.261-010	721.281-018	824.261-010	003.161-010		
3	Determine correct wire feeder size and overcurrent protection for motor				X	X		
4	Install motor, starter and feeder according to NEC or other applicable standards				X	X		
5	Select correct drive components and install them correctly				X	X		
	DUTY G -- Determining Power Requirements							
1	Determine electrical power needed for a building				X	X		
2	Determine branch current requirements				X	X		
3	Determine size of panels needed				X	X		
4	Determine wire sizes and types				X	X		
5	Determine conduit sizes and junctions				X	X		
6	Determine junction boxes and device boxes, types and sizes				X	X		
7	Layout electrical circuitry or plans				X	X		
8	Determine correct hookups for balanced load				X	X		
	DUTY H -- Installation of Distribution Systems							
1	Install wiring system in a residential location				X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
ELECTRICAL TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: ELECTRIC MOTOR ANALY	ELECTRIC MOTOR REPAI	ELECTRICIAN	ELECTRICAL TECHNICIA			
		DOT NO.: 721.261-010	721.281-018	824.261-010	003.161-010			
2	Install wiring system in a commercial or industrial location			X				
3	Repair/replace wiring			X	X			

SUMMARY OF MULTIPLE CAREER OPTIONS IN ELECTRONICS TECHNOLOGY

Secondary	-	Electronics Assembler	726.684-010
Post Secondary	-	Electronics Assembler	726.684-010
		Electronics Mechanic	828.281-010
		Electronics Technician	003.161-014

- Task Summary -

Electronics Assembler. Task #'s: A-1-8, B-1-6, B-8, C-1-8, F-1-14.

Electronics Mechanic. Task #'s: A-1-8, B-1-9, C-1-8, D-1-26, F-1-14.

Electronics Technician. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO						
		ELECTRONICS ASSEMBLER	ELECTRONICS MECHANIC	ELECTRONIC TECHNICIAN				
	DOT NO.	726.684-018	828.281-010	003.161-014				
	DUTY A -- Assembling Electronic Equipment							
* 1	Read and interpret schematics	X	X	X				
* 2	Splice wires	X	X	X				
* 3	Solder/unsolder components	X	X	X				
* 4	Assemble equipment from assembly guide	X	X	X				
* 5	Conduct physical inventories	X	X	X				
* 6	Substitute equivalent components	X	X	X				
* 7	Strip insulation from wire	X	X	X				
* 8	Select proper components from stock	X	X	X				
	DUTY B -- Installing Electronic Equipment							
* 1	Perform voltage checks	X	X	X				
* 2	Perform resistance checks	X	X	X				
* 3	Perform current checks	X	X	X				
* 4	Determine specifications from technical manuals	X	X	X				
* 5	Adjust electronic equipment with customer controls	X	X	X				
* 6	Adjust power supply voltage	X	X	X				
7	Modify physical support hardware		X	X				
* 8	Calibrate power supply voltage	X	X	X				
9	Install electronic equipment		X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: ELECTRONICS ASSEMBLER DOT NO.: 726.684-018	ELECTRONICS MECHANIC 828.281-010	ELECTRONIC TECHNICIAN 003.161-014
	DUTY C -- Maintenance of Electronic Equipment			
* 1	Clean tape head	X	X	X
* 2	Clean volume control	X	X	X
* 3	Clean spindle	X	X	X
* 4	Clean contact point	X	X	X
* 5	Clean speaker grille	X	X	X
* 6	Clean reflective mirror	X	X	X
* 7	Clean chassis	X	X	X
* 8	Clean tape recorder	X	X	X
	DUTY D -- Troubleshooting Electronic Equipment			
1	Calibrate power supply voltage		X	X
2	Calibrate meters using standard		X	X
3	Check/replace cords and cables		X	X
4	Check/replace static components		X	X
5	Check/replace tubes		X	X
6	Check/replace transistors		X	X
7	Check/replace IC chips		X	X
8	Check/replace IC network		X	X
9	Check/replace PC boards		X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIC	ELECTRONICS ASSEMBLER	ELECTRONICS MECHANIC	ELECTRONIC TECHNICIAN				
	DOT NO.	726.684-018	828.281-010	003.161-014				
TASK NO.	TASK NAME							
10	Construct PC boards		X	X				
11	Check/repair power supplies		X	X				
12	Check/repair vacuum tube amplifier		X	X				
13	Check/repair transistor amplifier		X	X				
14	Check/repair logic circuits		X	X				
15	Check/repair loudspeakers		X	X				
16	Check/repair microphones and pickup		X	X				
17	Check/repair oscillator		X	X				
18	Check/repair nonsinusoidal waveshape amplifier		X	X				
19	Check/repair pulse circuits		X	X				
20	Check/repair switching circuits		X	X				
21	Check/repair clampers		X	X				
22	Check/repair counters		X	X				
23	Check/repair clippers		X	X				
24	Check/repair sweep-generator circuits		X	X				
25	Determine amplification using instruments		X	X				
26	Trace circuits to locate problems		X	X				
	DUTY E -- Designing Modifying Electronic Equipment							
1	Design voltage amplifier			X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: ELECTRONICS ASSEMBLER DOT NO.: 726.684-018	ELECTRONICS MECHANIC 828.281-010	ELECTRONIC TECHNICIAN 003.161-014				
2	Design wave shaping circuits			X				
3	Design logic circuits			X				
4	Draft preliminary specifications for an electronic device			X				
5	Draw circuit schematics			X				
6	Modify schematics			X				
7	Modify circuits to accommodate IC's			X				
8	Prepare assembly guide			X				
9	Prepare parts list			X				
10	Prepare preliminary sketches			X				
11	Translate engineering specifications to functional designs			X				
12	Translate graphic specifications to written specifications			X				
13	Draw logic symbols			X				
14	Make truth tables for logic gates			X				
15	Determine meter movement, sensitivity, and resistance			X				
16	Extend the current range of a meter movement			X				
17	Extend voltage range of a meter movement			X				
18	Write written reports of tests			X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTION DOT NO.	ELECTRONICS ASSEMBLER 726.684-018	ELECTRONIC MECHANIC 828.281-010	ELECTRONIC TECHNICIAN 003.161-014				
	DUTY F -- Using Electronic Multi-meters								
* 1	Use VOM's		X	X	X				
* 2	Use VTVM's		X	X	X				
* 3	Use Ohmmeters		X	X	X				
* 4	Use single-purpose meters		X	X	X				
* 5	Use oscilloscopes		X	X	X				
* 6	Use tube-testers		X	X	X				
* 7	Use transistor analyzers		X	X	X				
* 8	Use capacitor testers		X	X	X				
* 9	Use sine-wave generators		X	X	X				
* 10	Use signal generators		X	X	X				
* 11	Use pulse generators		X	X	X				
* 12	Use square-wave generators		X	X	X				
* 13	Use impedence bridges		X	X	X				
* 14	Use frequency meters		X	X	X				

SUMMARY OF MULTIPLE CAREER OPTIONS IN INDUSTRIAL ELECTRICITY

Secondary -	Electrician's Helper (Industrial)	829.684-022
Post Secondary-	Electrician's Helper (Industrial)	829.684-022
	Electrician	824.261-010

- Task Summary -

Electrician's Helper. (An electrician's helper might perform tasks other than those specified here under the direction of an experienced electrician. This job title usually refers to those individuals involved in on-the-job training.) Task #'s: A-1-12.

Electrician (Industrial). All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS					
	DOT DESCRIPTION	ELECTRICIAN	ELECTRICIAN HELPER				
	DOT NO.	824.261-010	829.684-022				
	DUTY A -- Installing Residential Wiring						
* 1	Install a 115V lighting circuit with a single pole switch	X	X				
* 2	Install a 115V branch circuit with lights in parallel controlled by a single pole switch	X	X				
* 3	Install a 115V lighting circuit using two 3-way switches for control	X	X				
* 4	Install a 115V lighting circuit with control at three locations	X	X				
* 5	Install a 115V lighting circuit with control at four locations	X	X				
6	Install convenience outlet branch circuit with grounding	X					
* 7	Install a 115/230V three wire branch circuit with grounding	X	X				
* 8	Install an incandescent light controlled by a single pole dimmer	X	X				
* 9	Install an incandescent light controlled by a 3-way dimmer switch	X	X				
*10	Install a GFCI receptacle branch circuit	X	X				
*11	Install outdoor lighting on GFCI branch circuit	X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS					
	DOT DESCRIPTION	ELECTRICIAN	ELECTRICIAN HELPER				
TASK NO.	TASK NAME / DOT NO.	824.261-010	829.684-022				
*12	Install a specific purpose branch circuit	X	X				
13	Install a branch circuit and outlet at a swimming pool GFCI	X					
14	Install the GFCI outlets and branch circuits for a residential bathroom	X					
15	Install a 20 amp 115V small appliance branch circuit	X					
16	Install a 230V fixed appliance branch circuit (water/heater)						
17	Install a 230V range branch circuit	X					
18	Install a 230V oven branch circuit	X					
19	Install a 230V surface unit branch circuit	X					
20	Install a 230V branch circuit for base board heat with integral control	X					
21	Install a 230V branch circuit for a base board heat with a line voltage thermostat control	X					
22	Install branch circuit, mount and operate a wall insert for forced electric heater	X					
23	Install the feeder and branch circuits for a heat pump	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	ELECTRICIAN	ELECTRICIAN HELPER			
	DOT NO.	824.261-010	829.684-022			
TASK NO.	**TASK NAME**					
24	Install the feeder and branch circuits for a split heating and cooling system	X				
25	Install 115/230V branch circuits and manual controls for fractional horse power 1 Ø motors	X				
26	Install an intercom system	X				
27	Install door bells and chimes	X				
28	Install an open circuit burglar alarm system	X				
29	Install a self contained smoke and fire alarm system	X				
30	Install a momentary contact parallel switching 24V remote controlled latching relay system for residential lighting control	X				
31	Install a 115/230V 3 wire 1 Ø service entrance and panel (Conduct through the roof or SE cable)	X				
32	Build and install a service entrance for a mobile home	X				
33	Build a temporary service for a residential construction site	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
INDUSTRIAL ELECTRICIAN
RELATED SECONDARY CLUSTER ELECTRONICS
DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: ELECTRICIAN DOT NO.: 824.261-010	DOT DESCRIPTION: ELECTRICIAN HELPER DOT NO.: 829.684-022
	DUTY B -- Installing Transformers		
1	Perform test transformers to determine polarity	X	
2	Hook-up 1 Ø dual voltage transformer	X	
3	Hook-up 1 Ø transformers in series	X	
4	Hook-up 1 Ø transformers in parallel	X	
5	Calculate KVA load for 1 Ø transformers	X	
6	Calculate KVA load for 3 Ø transformers	X	
7	Hook-up 1 Ø auto transformer	X	
8	Hook-up 1 Ø buck-boost transformer	X	
9	Hook-up 3 Ø boost transformer	X	
10	Hook-up 3 Ø auto transformer	X	
11	Hook-up 3 Ø transformer bank; wye-wye	X	
12	Hook-up 3 Ø transformer bank; delta-delta	X	
13	Hook-up 3 Ø transformer bank; open-delta	X	
14	Hook-up 3 Ø transformer bank; wye-delta	X	
15	Hook-up 3 Ø transformer bank; delta-wye	X	
16	Hook-up 3 Ø transformer bank; reversed voltage	X	
17	Hook-up 3 Ø transformers for special applications	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS — DOT DESCRIPTION: ELECTRICIAN DOT NO. 824.261-010	ELECTRICIAN HELPER 829.684-022				
	DUTY C -- Installing Commercial Wiring						
1	Calculate total service load for a small commercial 3 Ø 4 wire	X					
2	Determine the location of service equipment according to local power company specifications	X					
3	Determine service entrance conductor size according to NEC	X					
4	Determine service conduits size and type according to NEC	X					
5	Install service conduits	X					
6	Install service entrance and grounding conductors	X					
7	Mount panels and connect service conductors	X					
8	Group general purpose outlets into branch circuits	X					
9	Calculate branch circuit wire and overcurrent size	X					
10	Calculate branch circuit conduit size and type	X					
11	Install conduits in a concrete slab	X					
12	Install floor outlet boxes to grade	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: ELECTRICIAN DOT NO.: 824.261-010	DOT DESCRIPTION: ELECTRICIAN HELPER DOT NO.: 829.684-022
13	Mount outlet and junction boxes	X	
14	Install conduits in masonary walls	X	
15	Install exposed conduit runs	X	
16	Install and connect branch circuit wiring	X	
17	Install specific purpose outlets	X	
18	Install conduits and branch circuits for lighting and control	X	
19	Install conduits branch circuits and controls for special purpose lighting (exit, emergency, etc.)	X	
20	Install branch circuits and control wiring for 3 Ø motors (manual & magnetic)	X	
21	Install subfeeders to subpanels	X	
22	Install feeders and branch circuits for 3 Ø heating and cooling systems	X	
23	Install branch circuits for 3 Ø water heaters	X	
.	DUTY D -- Installing Industrial Wiring		
1	Complete plus and site work for a small industrial facility	X	
2	Calculate the total motor load for a 480V 3 Ø, 208V 3 Ø, 208V 1 Ø, 120V 1Ø for a small industrial facility	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTION	ELECTRICIAN	ELECTRICIAN HELPER				
	DOT NO.	824.261-010	829.684-022				
TASK NO.	**TASK NAME**						
3	Calculate the total lighting load for a 277V, 115V, for a small industrial facility						
4	Calculate 1 Ø and 3 Ø welder loads	X					
5	Calculate motor load for, select and install a Bus-Duct system	X					
6	Select and mount the correct 480V 3 Ø 4 wire panel	X					
7	Select the correct transformer for a small industrial facility	X					
8	Select and mount the correct 208V 3 Ø 4 wire panel	X					
9	Install metering equipment	X					
10	Select and install the correct subfeed panels (main and main lugs only)	X					
11	Select proper in-house distribution equipment (subfeeders, cable trays, gutters, raceway systems, duct systems, and junction boxes)	X					
12	Select, install, and wire 227V florescent lighting	X					
13	Calculate and install the feeder and over-current protection for a group of motors	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS					
	DOT DESCRIPTION	ELECTRICIAN	ELECTRICIAN HELPER				
	DOT NO.	824.261-010	829.684-022				
14	Calculate and install a branch circuit for a welder (transformer arc, resistance, motor generator)	X					
15	Hook-up, operate and check the characteristics of a split phase motor (torque, speed, start amps, efficiency, FLA)	X					
16	Hook-up, operate and calculate the load characteristics of capacitor motors (torque, speed, start amps, efficiency, FLA)	X					
17	Hook-up, operate and calculate the load characteristics of a universal motor (torque, speed, start amps, efficiency, FLA)	X					
18	Hook-up, operate, and check the load characteristics of a 3 Ø induction motor (torque, speed, start amps, efficiency, FLA)	X					
19	Hook-up, operate, and check the load characteristics of a 3 Ø synchronous motor (torque, speed, start amps, efficiency, FLA)	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ____________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: ELECTRICIAN DOT NO.: 824.261-010	ELECTRICIAN HELPER 829.684-022				
21	Hook-up, operate, and check the load characteristics of w speed single and two winding 3 Ø motors (torque, speed, start amps, efficiency, FLA)	X					
22	Hook-up, operate and perform tests on single and three phase alternators (above and below rated speed, above and below rated volts; lagging, leading, and unity power factor, regulation of voltage)	X					
23	Hook-up and operate induction regulator	X					
24	Hook-up and operate a rotary frequency changer	X					
25	Hook-up and operate a synchronous rotary converter (AC to DC)	X					
26	Hook-up and operate a rotary converter (DC to AC)	X					
27	Calculate and demonstrate load characteristics of DC series, shunt, and compound motors (torque, speed, start amps, efficiency, FLA)	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRICIAN

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTION: ELECTRICIAN DOT NO.: 824.261-010	DOT DESCRIPTION: ELECTRICIAN HELPER DOT NO.: 829.684-022				
28	Hook-up, operate, and check load characteristics of series, shunt, and compound generators using resistive and inductive loads	X					
29	Improve the power factor of 115V single phase motor to above 85% using capacitors	X					
30	Hook-up and operate gear motors (belt driven, gear driven)	X					
31	Select proper method of machine drive (shaft coupling, belt drive, chain)	X					
32	Install and operate ventilator fans and exhause systems	X					
33	Determine the number of unmarked leads of AC motors (split phase, capacitor start, capacitor run, repulsion induction, wye and delta wound 3 Ø)	X					
34	Install wiring in hazardous locations	X					
35	Operate a power actuated fastening tool	X					

SUMMARY OF MULTIPLE CAREER OPTIONS IN INDUSTRIAL ELECTRONICS TECHNOLOGY

Secondary	-	Electronics Assembler	726.864-018
Post Secondary	-	Electronics Mechanic	828.821-010
		Electronics Technicial (Industrial)	003.161-014

- Task Summary -

Electronics Assembler. Task #'s: A-1-13, B-1, C-2, D-14, E-1-15.

Electronics Mechanic 828.821-010. Task #'s: A-1-5, A-8-9, A-11-13, B-1-9, C-1-49, D-6, D-13-14, E-1-15.

Electronics Technician (Industrial). All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

DOT DESCRIPTIO

TASK NO.	TASK NAME	ELECTRONICS ASSEMBLER	ELECTRONICS MECHANIC	ELECTRONICS TECHNI (INDUSTRIAL)				
	DOT NO.	726.684-018	828.281-010	003.161-014				
	DUTY A -- Assembling Electronic Systems and Components							
* 1	Read and interpret schematics	X	X	X				
* 2	Trace circuits to determine assembly requirements	X	X	X				
* 3	Splice wires	X	X	X				
* 4	Solder/unsolder components	X	X	X				
* 5	Modify physical support hardware	X	X	X				
* 6	Assemble equipment from assembly guides	X		X				
* 7	Conduct physical inventories	X		X				
* 8	Select proper circuit components	X	X	X				
* 9	Substitute equivalent components	X	X	X				
* 10	Construct PC boards	X		X				
* 11	Wrap wire to connectors	X	X	X				
* 12	Make up harnesses and cables	X	X	X				
* 13	Place orders for components	X	X	X				
	DUTY B -- Installing Electronic Systems and Components							
* 1	Perform voltage checks	X	X	X				
2	Perform resistance checks		X	X				
3	Perform current checks		X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ____________

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTIC	ELECTRONICS ASSEMBLER	ELECTRONICS MECHANIC	ELECTRONICS TECHNI (INDUSTRIAL)				
	DOT NO.	726.684-018	828.281-010	003.161-014				
TASK NO.	TASK NAME							
4	Determine specifications for systems and components from technical manuals		X	X				
5	Trace circuits to determine installation requirements		X	X				
6	Adjust electronic equipment with controls		X	X				
7	Adjust electronic equipment with service controls		X	X				
8	Check/replace cords and cables		X	X				
9	Hood up servo mechanism systems		X	X				
	DUTY C -- Troubleshooting, Repairing and Replacing Electronics Systems and Components							
1	Determine amplification using instruments		X	X				
* 2	Trace circuits to locate problems	X	X	X				
3	Calibrate power supply voltage		X	X				
4	Calibrate DC levels for logic circuits		X	X				
5	Calibrate multi-vibrator circuits		X	X				
6	Calibrate timing/clock pulse circuits		X	X				
7	Calibrate vertical amplitudes		X	X				
8	Calibrate meters using standards		X	X				
9	Check/replace static components		X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
INDUSTRIAL ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: ELECTRONICS ASSEMBLER DOT NO.: 726.684-018	ELECTRONICS MECHANIC 828.281-010	ELECTRONICS TECHNIC (INDUSTRIAL) 003.161-014				
10	Check/replace tubes		X	X				
11	Check/replace transistors		X	X				
12	Check/replace IC chips		X	X				
13	Check/replace IC network		X	X				
14	Check/replace PC boards		X	X				
15	Check/repair power supplies		X	X				
16	Check/repair vacuum tube amplifiers		X	X				
17	Check/repair transistor amplifiers		X	X				
18	Check/repair logic circuits		X	X				
19	Check/replace loudspeaker		X	X				
20	Check/repair loudspeaker microphones							
	and pickup		X	X				
21	Check/repair oscillators		X	X				
22	Check/repair nonsinusoidal aveshape amplifier		X	X				
23	Check/repair pulse circuits		X	X				
24	Check/repair switching circuits		X	X				
25	Check/repair limiters, clampers, counters,							
	clippers		X	X				
26	Check/repair sweep generator circuits		X	X				
27	Troubleshoot common electronic circuits		X	X				
28	Select and connect transducers		X	X				
29	Test transducers		X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
INDUSTRIAL ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTIO	ELECTRONICS ASSEMBLER	ELECTRONICS MECHANIC	ELECTRONICS TECHNIC (INDUSTRIAL)				
		DOT NO.	726.684-018	828.281-010	003.161-014				
30	Check/repair bridge circuits			X	X				
31	Check/repair phase shift circuits			X	X				
32	Troubleshoot electronic motor connected circuits			X	X				
33	Replace modular inelectronic motor control circuits			X	X				
34	Check/repair SCR circuits			X	X				
35	Check/repair rectifier circuit			X	X				
36	Check/repair thyrotrans			X	X				
37	Troubleshoot electronic motor control systems			X	X				
38	Troubleshoot regulated electronic power supplies			X	X				
39	Troubleshoot photoelectric devices			X	X				
40	Check/repair time delay relays			X	X				
41	Troubleshoot electronic heating and welding devices			X	X				
42	Troubleshoot radio control systems			X	X				
43	Troubleshoot three phase rectifier			X	X				
44	Troubleshoot strain gap circuits			X	X				
45	Troublehsoot strobescope circuits			X	X				
46	Troubleshoot electronic flow meters			X	X				
47	Troubleshoot counter circuits			X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) INDUSTRIAL ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTIC DOT NO.	ELECTRONICS ASSEMBLER 726.684-018	ELECTRONICS MECHANIC 828.281-010	ELECTRONICS TECHNICI (INDUSTRIAL) 003.161-014				
48	Calibrate/adjust servo mechanisms			X	X				
49	Troubleshoot servo mechanisms			X	X				
	DUTY D -- Modifying and Designing								
	Electrical Systems and Components								
1	Design voltage amplifiers				X				
2	Design wave shaping circuits				X				
3	Design logic circuits				X				
4	Draft preliminary specifications for an								
	electronic device				X				
5	Draw circuit schematics				X				
6	Modify schematics			X	X				
7	Modify circuits to accommodate IC's				X				
8	Prepare assembly guides				X				
9	Prepare parts lists				X				
10	Prepare preliminary sketches				X				
11	Translate engineering specifications to								
	functional designs				X				
12	Translate graphic specifications into								
	written specifications				X				
13	Write reports of tests			X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
INDUSTRIAL ELECTRONICS TECHNOLOGY

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO DOT NO.	ELECTRONICS ASSEMBLER 726.684-018	ELECTRONICS MECHANIC 828.281-010	ELECTRONICS TECHNIC (INDUSTRIAL) 003.161-014
* 14	Use electronic references, guides, and manuals		X	X	X
15	Design interface between subassemblies				X
16	Design physical support hardware for electronic assemblies				X
	DUTY E -- Using Electronic Multi-meters				
* 1	Use VOM's		X	X	X
* 2	Use VTVM's		X	X	X
* 3	Use ohmmeters		X	X	X
* 4	Use single purpose meters		X	X	X
* 5	Use oscilloscopes		X	X	X
* 6	Use tube testers		X	X	X
* 7	Use transistor analyzers		X	X	X
* 8	Use capacitor testers		X	X	X
* 9	Use sine wave generators		X	X	X
* 10	Use signal generators		X	X	X
* 11	Use pulse generators		X	X	X
* 12	Use square wave generators		X	X	X
* 13	Use impedance bridges		X	X	X
* 14	Use frequency counter		X	X	X
* 15	Read schematics		X	X	X

SUMMARY OF MULTIPLE CAREER OPTIONS IN TELEVISION & RADIO REPAIR

Secondary	-	Antenna Installer	823.684-010
		Tape Recorder Repairer	720.281-014
		Radio Repairer	720.281-010
Post-Secondary	-	Antenna Installer	823.684-010
		Tape Recorder Repairer	720.281-014
		Radio Repairer	720.281-010
		Radio & Television Repairer	720.281-018

- Task Summary -

Antenna Installer. Task #'s: C-1, E-32-36.

Tape Recorder Repairer. Task #'s: C-10, D-1-6.

Radio Repairer. Task #'s: A-1-6, B-1-6, C-1-10.

Radio & Television Repairer. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
TELEVISION AND RADIO REPAIR

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO DOT NO.	ANTENNA INSTALLER 823.684-010	TAPE RECORDER REPAIRER 720.281-014	RADIO REPAIRER 720.281-010	RADIO & TELEVISION REPAIRER 720.281-018			
	DUTY A -- AM Radio Repair								
* 1	Repair AM radio R.F. section				X	X			
* 2	Repair AM radio I.F. Section				X	X			
* 3	Repair AM radio audio detector				X	X			
* 4	Repair AM radio automatic gain control circuit				X	X			
* 5	Repair AM radio audio circuit				X	X			
* 6	Repair AM radio power supply				X	X			
	DUTY B -- FM Stereo Receiver Repair								
* 1	Repair FM receiver R.F. section				X	X			
* 2	Repair FM receiver I.F. section				X	X			
* 3	Repair FM receiver multiplex section				X	X			
* 4	Repair FM receiver audio detector				X	X			
* 5	Repair FM receiver audio amplifier section				X	X			
* 6	Repair FM receiver power supply				X	X			
	DUTY C -- Repair and Service Record Changers								
* 1	Repair cartridge - needle				X	X			
* 2	Repair drive system				X	X			
* 3	Repair motors				X	X			
* 4	Repair change cycle				X	X			
* 5	Repair trip mechanism				X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) TELEVISION AND RADIO REPAIR

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ______

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	ANTENNA INSTALLER	TAPE RECORDER REPAIRER	RADIO REPAIRER	RADIO & TELEVISION REPAIRER		
	DOT NO.	823.684-010	720.281-014	720.281-010	720.281-018		
TASK NO.	TASK NAME						
* 6	Repair shut-off system			X	X		
* 7	Repair record drop system			X	X		
* 8	Repair indexing mechanism			X	X		
* 9	Repair tone arm			X	X		
* 10	Clean and lubricate complete system	X	X	X	X		
	DUTY D -- Repair and Service Tape Recorder						
* 1	Repair record system		X	X	X		
* 2	Repair play back system		X	X	X		
* 3	Repair mechanical system		X	X	X		
* 4	Repair power supply		X	X	X		
* 5	Repair microphones		X	X	X		
* 6	Clean and lubricate		X	X	X		
	DUTY E -- Television Repair						
1	Repair low voltage power supply				X		
2	Repair channel selector				X		
3	Repair intermediate frequency strip (I.F.)				X		
4	Repair automatic fine tuning control circuit (A.F.T.)				X		
5	Repair sound sector				X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) TELEVISION AND RADIO REPAIR

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME						
	DOT DESCRIPTION	ANTENNA INSTALLER	TAPE RECORDER REPAIRER	RADIO REPAIRER	RADIO & TELEVISION REPAIRER		
	DOT NO.	823.684-010	720.281-014	720.281-010	720.281-018		
6	Repair video detector circuit				X		
7	Repair video amplifier section				X		
8	Repair sync separator circuit				X		
9	Repair automatic gain control (A.G.C.) circuit				X		
10	Repair vertical deflection section				X		
11	Repair horizontal automatic frequency control (A.F.C.)				X		
12	Repair horizontal oscillator circuit				X		
13	Repair horizontal output circuit				X		
14	Repair damper circuit				X		
15	Repair high voltage circuit				X		
16	Repair high voltage regulator circuit				X		
17	Repair focus circuit				X		
18	Repair color killer circuit				X		
19	Repair automatic frequency and phase control circuit (A.F.P.C.)				X		
20	Repair 3.58 MH$_2$ oscillator circuit				X		
21	Repair burst amplifier circuit				X		
22	Repair automatic chroma control (A.C.C.) circuit				X		
23	Repair automatic tint control (A.T.C.) circuit				X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) TELEVISION AND RADIO REPAIR

RELATED SECONDARY CLUSTER ELECTRONICS

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS / DOT DESCRIPTIO: ANTENNA INSTALLER	TAPE RECORDER REPAIRER	RADIO REPAIRER	RADIO & TELEVISION REPAIRER
	DOT NO.	823.684-010	720.281-014	720.281-010	720.281-018
24	Repair chroma bandpase amplifier circuit				X
25	Repair chroma demodulator circuit				X
26	Repair chroma amplifier circuit				X
27	Repair vertical interval reference circuit				X
28	Repair automatic mode operation				X
29	Repair/replace picture tube				X
30	Adjust proper color purity				X
31	Adjust proper convergence				X
* 32	Install antenna	X			X
* 33	Repair antenna system	X			X
* 34	Estimating cost of repair	X			X
* 35	Write repair bills	X			X
* 36	Inventory and order stock items	X			X

FOOD SERVICE OCCUPATIONS

SUMMARY OF MULTIPLE CAREER OPTIONS IN FOOD SERVICE

Secondary -	Waiter/Waitress Informal	311.477-030
	Waiter/Waitress Formal	311.477-026
	Dining Room Attendant	311.627-018
	Short Order Cook	313.671-010
Post Secondary -	Waiter/Waitress Informal	311.477-030
	Waiter/Waitress Formal	311.477-026
	Dining Room Attendant	311.627-018
	Short Order Cook	313.671-010
	Host/Hostess	310.361-014
	Cook	313.361-014

- Task Summary -

Waiter/Waitress Informal. Task #'s: A-1-19, B-1-8, D-1-7, E-2, E-5, E-7-8, E-11, F-3-4, G-6.

Waiter/Waitress Formal. Task #'s: A-1-19, B-2, B-5-8, D-1-7, E-2-3, E-5, E-7, E-10-11, F-4, G-5-6.

Dining Room Attendant. Task #'s: A-3-4, A-7-19, B-1-8, C-3, D-1-7, E-2-5, E-7-11, F-3-4.

Short Order Cook. Task #'s: A-7-11, B-1-8, C-1-4, D-1, D-6-7, E-1-7, E-9-10, E-4, G-1, G-4-9.

Host/Hostess. Task #'s: A-1-3, A-6-11, A-14-19, B-6-8, C-1, C-3-4, D-1, D-4-7, E-2, E-7, E-4, G-1, G-4-9.

Cook. Task #'s: A-2-3, A-18-19, B-1-3, B-6, B-8, C-1-4, D-1, D-6, E-1-7, E-9-10, F-1-19, G-1-4, G-7-9.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) FOOD SERVICES

RELATED SECONDARY CLUSTER FOOD SERVICE

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIC	WAITER/WAITRESS INFORMAL	WAITER/WAITRESS FORMAL	DINING ROOM ATTENDANT	SHORT ORDER COOK	HOST/HOSTESS	COOK	
	DOT NO.	311.477-030	311.477-026	311.677-018	313.671-010	310.361-014	313.361-014	
TASK NO.	TASK NAME							
	DUTY A -- Performing Customer Service							
	Functions							
* 1	Present menu	X	X			X		
* 2	Answer questions regarding food service	X	X			X	X	
* 3	Make suggestions regarding food	X	X	X		X	X	
* 4	Write and relay orders	X	X	X				
* 5	Serve meal at table	X	X					
* 6	Observe guests and fulfill additional requests	X	X			X		
* 7	Accept and record payment	X	X	X	X	X		
* 8	Operate cash register	X	X	X	X	X		
* 9	Operate adding machine to total bill	X	X	X	X	X		
* 10	Record charge card purchases	X	X	X	X	X		
* 11	Serve ice-water to patrons	X	X	X		X		
* 12	Keep table serviced with condiments and/or speciality items	X	X	X				
* 13	Run errands and make deliveries	X	X	X				
* 14	Serve cocktails	X	X			X		
* 15	Serve other beverages	X	X	X	X	X		
* 16	Greet guests	X	X	X		X		
* 17	Escort guests to tables	X	X	X		X		
* 18	Handle complaints	X	X	X	X	X	X	
* 19	Make proper change	X	X	X	X	X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) FOOD SERVICES

RELATED SECONDARY CLUSTER FOOD SERVICE

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION: WAITER/WAITRESS INFORMAL	WAITER/WAITRESS FORMAL	DINING ROOM ATTENDANT	SHORT ORDER COOK	HOST/HOSTESS	COOK	
		DOT NO. 311.477-030	311.477-026	311.677-018	313.671-010	310.361-014	313.361-014	
	DUTY B -- Cleaning and Maintaining							
	Kitchen Equipment							
* 1	Clean and maintain kitchen equipment	X		X	X		X	
* 2	Clean and sanitize entire kitchen area	X	X	X	X		X	
* 3	Wash dishes and utensils by hand	X		X	X		X	
* 4	Wash dishes and utensils by machine	X		X	X			
* 5	Clean and polish shelves and service areas	X	X	X	X			
* 6	Clean and maintain serving area equipment	X	X	X	X	X	X	
* 7	Clean and maintain serving area environment	X	X	X	X	X		
* 8	Perform other duties necessary for compliance							
	with health and cleanliness regulations	X	X	X	X	X	X	
	DUTY C -- Ordering Kitchen Supplies							
* 1	Order, store, and inventory supplies				X	X	X	
* 2	Order, store, and inventory food				X		X	
* 3	Receive, check, and report shipments			X	X	X	X	
* 4	Requisition dining room supplies				X	X	X	
	DUTY D -- Prepare for Customer Service							
* 1	Replenish condiments	X	X	X	X	X	X	
* 2	Remove dirty dishes from dining area	X	X	X				
* 3	Replace soiled table linen	X	X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) FOOD SERVICES

RELATED SECONDARY CLUSTER FOOD SERVICE

DUTY

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS						
	DOT DESCRIPTIC	WAITER/WAITRESS INFORMAL	WAITER/WAITRESS FORMAL	DINING ROOM ATTENDANT	SHORT ORDER COOK	HOST/HOSTESS	COOK	
TASK NO.	TASK NAME / DOT NO.	311.477-030	311.477-026	311.677-018	313.671-010	310.361-014	313.361-014	
* 4	Set table	X	X	X		X		
* 5	Replenish supplies of linen, tableware, etc.	X	X	X		X		
* 6	Supply service bar with food	X	X	X	X	X	X	
* 7	Fill beverage dispensers	X	X	X	X	X		
	DUTY E -- Preparing for Cooking Activities							
* 1	Convert recipes to larger or smaller product				X		X	
* 2	Weigh and measure ingredients properly	X	X	X	X	X	X	
* 3	Prepare and use garnishes		X	X	X		X	
* 4	Slice meats by hand and by slicing machine			X	X		X	
* 5	Trim, cut, and shred fruits and vegetables	X	X	X	X		X	
* 6	Prepare glazes				X		X	
* 7	Arrange food for buffet service	X	X	X	X	X	X	
* 8	Properly serve food for buffet service	X		X				
* 9	Cut, trim, and bone meats and fish			X	X		X	
* 10	Prepare speciality dishes at patron's table		X	X	X		X	
* 11	Assist cook in preparation of speciality							
	items	X	X	X				
	DUTY F -- Performing Cooking Activities							
* 1	Cook and prepare cake-type desserts and pies				X		X	
* 2	Cook and prepare pudding, gelatin, fruit							
	and custard desserts				X		X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) FOOD SERVICES

RELATED SECONDARY CLUSTER FOOD SERVICE

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIC	WAITER/WAITRESS INFORMAL	WAITER/WAITRESS FORMAL	DINING ROOM ATTENDANT	SHORT ORDER COOK	HOST/HOSTESS	COOK	
	DOT NO.	311.477-030	311.477-026	311.677-018	313.671-010	310.361-014	313.361-014	
TASK NO.	TASK NAME							
* 3	Make and prepare sandwiches	X		X	X		X	
* 4	Prepare beverages (hot and cold)	X	X	X	X	X	X	
* 5	Cook/prepare dehydrated or concentrated foods				X		X	
* 6	Cook/prepare meat				X		X	
* 7	Cook/prepare fish				X		X	
* 8	Cook/prepare fowl				X		X	
* 9	Cook/prepare cereals (hot and cold)				X		X	
* 10	Cook/prepare eggs				X		X	
* 11	Cook/prepare soups				X		X	
* 12	Cook/prepare quick breads				X		X	
* 13	Cook/prepare cookies				X		X	
* 14	Cook/prepare fruits				X		X	
* 15	Cook/prepare vegetables				X		X	
* 16	Cook/prepare gravies and sauces				X		X	
* 17	Cook/prepare salads				X		X	
* 18	Cook/prepare salad dressings				X		X	
* 19	Cook/prepare fancy pastries				X		X	
	DUTY G -- Organizing and Planning							
* 1	Plan menu				X	X	X	
* 2	Plan cooking schedule				X		X	
* 3	Organize efficient kitchen work plan				X		X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) FOOD SERVICES

RELATED SECONDARY CLUSTER FOOD SERVICE

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIO	WAITER/WAITRESS INFORMAL	WAITER/WAITRESS FORMAL	DINING ROOM ATTENDANT	SHORT ORDER COOK	HOST/HOSTESS	COOK	
	DOT NO.	311.477-030	311.477-026	311.677-018	313.671-010	310.361-014	313.361-014	
TASK NO.	TASK NAME							
* 4	Supervise dining room personnel				X	X	X	
* 5	Schedule dining reservations		X			X		
* 6	Arrange parties and special services	X	X			X		
* 7	Assign and schedule work tasks				X	X	X	
* 8	Inspect dining rooms and work stations				X	X	X	
* 9	Coordinate overall personnel function				X	X	X	

GRAPHIC ARTS

SUMMARY OF MULTIPLE CAREER OPTIONS IN GRAPHIC ARTS

*Secondary -

(A typical high school student would be expected to select from the various career options. He/she would not necessarily complete the entire list of titles.)

Litho-Make-Ready Assistant	972.664-010
Offset Duplicating Machine Operator	651.684-014
Phototypesetter Operator	650.582-022
Stripper, Photo-lithographic	972.381.022
Offset-Press Operator I	651.482-010
Photographer, Lithographic	972.382-014
Graphic Designer/ Layout	141.061-018
Bindery Worker	653.685-019
Offset Platemaker	971.381-018

Post-Secondary -

Litho-Make-Ready Assistant	972.664-010
Offset Duplicating Machine Operator	651.684-014
Phototypesetter Opr.	650.582-022
Stripper, Photo-lithographic	972.381-022
Offset-Press Opr. I	651.482-010
Photographer, Lithographic	972.382-014
Graphic Designer/ Layout	141.061-018
Bindery Worker	653.685-019
Offset Platemaker	971.381-018
Printer	651.380-010

- Task Summary -

Litho-Make-Ready Assistant. Task #'s: A-14, E-1-4.

Offset Duplicating Machine Operator. Task #'s: A-14, E-1-7, E-10.

Phototypesetter Operator. Task #'s: A-4-6, A-8-12, A-14, A-16, B-16.

Stripper, Photolithographic. Task #'s: A-8, A-14, B-2-3, C-1-11.

Offset Press Operator. Task #'s: A-16, E-1-10.

Photographer, Lithographic. Task #'s: A-7-10, A-14, A-16, B-1-19, C-11, D-5, D-6, D-7.

Graphic Design, Layout Artist. Task #'s: A-1- 16, C-1.

Bindery Worker. Task #'s: A-8, A-14, F-1-8.

Offset Platemaker. Task #'s: C-1-11, D-1-10.

Printer. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) GRAPHIC ARTS

RELATED SECONDARY CLUSTER GRAPHIC ARTS

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	LITHO-MAKE-READY ASSISTANT 972.664-010	OFFSET-DUPLICATING MACHINE OPERATOR 651.684-014	PHOTOTYPESETTER OPERATOR 650.582-022	STRIPPER, PHOTOLITHOGRAPHIC 972.381-022	OFFSET-PRESS OPERATOR I 651.482-010	PHOTOGRAPHER, LITHOGRAPHIC 972.382-014	GRAPHIC DESIGNER LAYOUT ARTIST 141.061-018	BINDERY WORKER 653.685-019
	DUTY A -- Design, Layout and Composition								
* 1	Prepare thumbnail sketches							X	
* 2	Prepare rough layouts							X	
* 3	Prepare comprehensive layouts							X	
* 4	Set letters by hand			X				X	
* 5	Use mechanical lettering machines			X				X	
* 6	Operate photo composers			X				X	
* 7	Write specifications for a job						X	X	
* 8	Measure copy and graphics			X	X		X	X	X
* 9	Compute copy size			X			X	X	
*10	Mark camera copy			X			X	X	
*11	Mark composition copy			X				X	
*12	Edit proofs			X				X	
*13	Sort and reclaim art work							X	
*14	File art work and maintain records	X	X	X	X		X	X	X
*15	Clean and service equipment used in layout							X	
*16	Proportion copy			X		X	X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) GRAPHIC ARTS

RELATED SECONDARY CLUSTER GRAPHIC ARTS

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

ASK NO.	TASK NAME	DOT DESCRIPTION: OFFSET PLATEMAKER DOT NO.: 971.[illegible]8	PRINTER 651.380-010					
	DUTY A -- Design, Layout and Composition							
1	Prepare thumbnail sketches		X					
2	Prepare rough layouts		X					
3	Prepare comprehensive layouts		X					
4	Set letters by hand		X					
5	Use mechanical lettering machines		X					
6	Operate photo composers		X					
7	Write specifications for a job		X					
8	Measure copy and graphics		X					
9	Compute copy size		X					
10	Mark camera copy		X					
11	Mark composition copy		X					
12	Edit proofs		X					
13	Sort and reclaim art work		X					
14	File art work and maintain records		X					
15	Clean and service equipment used in layout		X					
16	Proportion copy		X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
GRAPHIC ARTS

RELATED SECONDARY CLUSTER GRAPHIC ARTS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

ASK O.	TASK NAME	DOT DESCRIPTION: LITHO-MAKE-READY ASSISTANT DOT NO.: 972.664-010	OFFSET-DUPLICATING MACHINE OPERATOR 651.684-014	PHOTOTYPESETTER OPERATOR 650.582-022	STRIPPER, PHOTOLITHOGRAPHIC 972.381-022	OFFSET-PRESS OPERATOR I 651.482-010	PHOTOGRAPHER, LITHOGRAPHIC 972.382-014	GRAPHIC DESIGNER LAYOUT ARTIST 141.061-018	BINDERY WORKER 653.685-010
	DUTY B -- Camera Operation								
1	Write specifications for camera work								
2	Opaque and scrib line negatives				X		X		
3	Inspect, clean and adjust for camera copy				X		X		
4	Prepare darkroom and arrange equipment						X		
5	Prepare tray solution						X		
6	Prepare rinse						X		
7	Measure optical density of copy						X		
8	Make basic exposure test for line copy						X		
9	Make basic exposure test for main exposure						X		
10	Make basic exposure test for flash exposure						X		
11	Calculate main and flash exposure for continuous tone copy						X		
12	Calculate filtration exposure for drop or hold						X		
13	Set-up, load and expose film with camera						X		
14	Process exposed film						X		
15	Load and expose film by contact method						X		
16	Inspect, clean, and repair illuminating system			X			X		
17	Inspect, clean and repair cameras						X		
18	Inspect, clean, and repair darkroom equipment						X		
19	Clean darkroom, equipment and dispose of chemicals						X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) GRAPHIC ARTS

RELATED SECONDARY CLUSTER GRAPHIC ARTS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION OFFSET PLATEMAKER DOT NO. 971.381-018	PRINTER 651.380-010				
	DUTY B -- Camera Operation						
1	Write specifications for camera work		X				
2	Opaque and scrib line negatives		X				
3	Inspect, clean and adjust for camera copy		X				
4	Prepare darkroom and arrange equipment		X				
5	Prepare tray solution		X				
6	Prepare rinse		X				
7	Measure optical density of copy		X				
8	Make basic exposure test for line copy		X				
9	Make basic exposure test for main exposure		X				
10	Make basic exposure test for flash exposure		X				
11	Calculate main and flash exposure for continuous tone copy		X				
12	Calculate filtration exposure for drop or hold		X				
13	Set-up, load and expose film with camera		X				
14	Process exposed film		X				
15	Load and expose film by contact method		X				
16	Inspect, clean, and repair illuminating system		X				
17	Inspect, clean and repair cameras		X				
18	Inspect, clean, and repair darkroom equipment		X				
19	Clean darkroom, equipment and dispose of chemicals		X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) GRAPHIC ARTS

RELATED SECONDARY CLUSTER GRAPHIC ARTS

DUTY

***DENOTES SECONDARY EXPECTANCY**

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION / DOT NO.	LITHO-MAKE-READY ASSISTANT 972.664-010	OFFSET-DUPLICATING MACHINE OPERATOR 651.684-014	PHOTOTYPESETTER OPERATOR 650.582-022	STRIPPER, PHOTOLITHOGRAPHIC 972.381-022	OFFSET-PRESS OPERATOR I 651.482-010	PHOTOGRAPHER, LITHOGRAPHIC 972.382-014	GRAPHIC DESIGNER LAYOUT ARTIST 141.061-018	BINDERY WORKER 653.685-010
	DUTY C -- Strip, Mask and Photolithographic									
	Operation									
* 1	Mark flats for proper proportions					X			X	
* 2	Prepare masking sheets					X				
* 3	Strip line negatives					X				
* 4	Outline and strip half tones					X				
* 5	Strip multiple burn flats					X				
* 6	Strip multi-color flats					X				
* 7	Strip flats with screen tint					X				
* 8	Strip flats with reverse overprint					X				
* 9	Strip step-off flats					X				
* 10	Finish flats (half-tones, etc.)					X				
* 11	Inspect, clean and adjust for light tables					X		X		
	DUTY D -- Offset Plate Making									
1	Determine plate exposure times									
2	Expose offset plates									
3	Process offset plates									
4	Inspect and preserve plates									
* 5	Perform multiple exposures by hand							X		
* 6	Calculate exposure times for proofing									
	materials							X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) GRAPHIC ARTS

RELATED SECONDARY CLUSTER GRAPHIC ARTS

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	LITHO-MAKE-READY ASSISTANT 972.664-010	OFFSET-DUPLICATING MACHINE OPERATOR 651.684-014	PHOTOTYPESETTER OPERATOR 650.582-022	STRIPPER, PHOTOLITHOGRAPHIC 972.381-022	OFFSET-PRESS OPERATOR I 651.482-010	PHOTOGRAPHER, LITHOGRAPHIC 972.382-014	GRAPHIC DESIGNER LAYOUT ARTIST 141.061-018	BINDERY WORKER 653.685-010
* 7	Expose proofing materials						X		
8	Determine exposure times for photo-direct plates								
9	Expose photo-direct plates								
10	Inspect, clean and maintain platemaking equipment								
	DUTY E -- Offset Press Operation								
* 1	Lubricate offset presses	X	X			X			
* 2	Inspect press before printing	X	X			X			
* 3	Install plates on presses	X	X			X			
* 4	Set paper feeds and delivery systems	X	X			X			
* 5	Ink press and set dampening systems		X			X			
* 6	Operate offset presses		X			X			
* 7	Adjust press for various size/weight of stocks		X			X			
* 8	Troubleshoot press operation for printing problems					X			
* 9	Troubleshoot press operation for feed and delivery problems					X			
* 10	Clean and maintain offset presses		X			X			
	DUTY F -- Bindery Operation								
* 1	Lubricate bindery equipment								X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) GRAPHIC ARTS

RELATED SECONDARY CLUSTER GRAPHIC ARTS

DUTY ____________

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS							
	DOT DESCRIPTION	LITHO-MAKE-READY ASSISTANT	OFFSET-DUPLICATING MACHINE OPERATOR	PHOTOTYPESETTER OPERATOR	STRIPPER, PHOTOLITHOGRAPHIC	OFFSET-PRESS OPERATOR I	PHOTOGRAPHER, LITHOGRAPHIC	GRAPHIC DESIGNER LAYOUT ARTIST	BINDERY WORKER
TASK NO.	TASK NAME / DOT NO.	972.664-010	651.684-014	650.582-022	972.381-022	651.482-010	972.382-014	141.061-018	653.685-010
* 2	Set-up and operate folders								X
* 3	Set-up and operate paper drills								X
* 4	Set-up and operate stitchery								X
* 5	Set-up and operate cutting and trimming machines								X
* 6	Collate by hand								X
* 7	Operate semi-automatic collator								X
* 8	Wrap and package								X

METAL WORKING

SUMMARY OF MULTIPLE CAREER OPTIONS IN MACHINE SHOP*

Secondary -	Grinder Operator	603.280-038
	Drill Press Operator	606.682-014
	Milling Machine Operator	605.683-030
	Lathe Operator	604.685-026
Post Secondary -	Grinder Operator	603.280-038
	Drill Press Operator	606.682-014
	Milling Machine Operator	605.683-030
	Lathe Operator	604.685-026
	Machinist	600.280-022
	(Numerical Control Operator--No DOT EDM Operator--No DOT)	

(*These suggested options may be largely determined by equipment availability in a given program.)

- Task Summary -

Grinder Operator. Task #;s: A-1-7, A-10, A-12, A-18, A-24-25, A-30, A-34-35, A-43, E-1-9, G-1-5.

Drill Press Operator. Task #'s: A-1-3, A-14, A-17-18, A-24-25, A-27, A-30, A-34-35, F-1-2, G-5.

Milling Machine Operator. Task #'s: A-1-3, A-5-7, A-14, A-16-19, A-24-25, A-27, A-34-35, A-43, C-1-20, D-1-7, H-3-7.

Lathe Operator. Task #'s: A-1-3, A-5-7, A-13-18, A-24-25, A-27, A-34-35, B-1-25, G-1-5.

Machinist. Task #'s: A-1-43, B-1-25, C-1-20, D-1-7, E-1-9, F-1-12, G-1-5, H-1-7, I-1-2, I-7, J-12.

NC Operator. Task #'s: A-1-3, A-5, A-14-16, A-18, A-24-25, A-35, B-1-25, C-1-20, E-1-5, E-8-9, J-1-13.

EDM Operator. Task #'s: A-1-7, A-11, A-13-20, A-22-27, A-29, A-33-43, B-1-25, C-1-20, D-1-7, E-1-5, E-8-9, F-1-12, G-1-5, H-1-7, I-1-8.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME / DOT DESCRIPTION	GRINDER OPERATOR	DRILL PRESS OPERATOR	MILLING MACHINE OPERATOR	LATHE OPERATOR	MACHINIST	NC OPERATOR	EDM OPERATOR
	DOT NO.	603.280-038	606.682-014	605.685-030	604.685-026	600.280.022	**	**
	DUTY A -- Performing Bench Operation							
* 1	Read and interpret blueprints	X	X	X	X	X	X	X
* 2	Measure with steel rule or tape	X	X	X	X	X	X	X
* 3	Measure with micrometer	X	X	X	X	X	X	X
* 4	Check measurements with gauge block	X				X		X
* 5	Measure with dial indicators	X		X	X	X	X	X
* 6	Read and interpret machinist handbook	X		X	X	X		X
* 7	Layout materials and equipment for precision machine work	X		X	X	X		X
8	Test metals					X		
9	Heat treat metals					X		
* 10	Hone metal on honing machine	X				X		
11	Perform bench filing					X		X
* 12	Polish metals with hand tools	X				X		
* 13	Cut with hand hacksaw				X	X		X
* 14	Cut threads with hand taps		X	X	X	X	X	X
* 15	Cut threads with dies				X	X	X	X
* 16	Ream holes with hand reamer			X	X	X	X	X
* 17	Remove threaded fasteners and repair threads		X	X	X	X		X
* 18	Work and shape metals with hand tools	X	X	X	X	X	X	X
* 19	Locate holes			X		X		X
20	Remove and replace parts with press					X		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	GRINDER OPERATOR	DRILL PRESS OPERATO	MILLING MACHINE OPERATOR	LATHE OPERATOR	MACHINIST	NC OPERATOR	EDM OPERATOR
	DOT DESCRIPTIO DOT NO.	603.280-038	606.682-014	605.685-030	604.685-026	600.280-022	**	**
21	Straighten parts with press					X		
22	Drill holes with hand drill					X		X
23	Make shop sketchings					X		X
* 24	Work from drawing and sketching	X	X	X	X	X	X	X
* 25	Convert fractions to decimals	X	X	X	X	X	X	X
26	Convert English measurements to metric					X		X
* 27	Lay out work pieces	X		X	X	X		X
28	Hand chip metal					X		
29	Hand sand metal					X		X
* 30	Lap metal	X				X		
31	Broach metal					X		
32	Work metal with power chisels punch and hammer					X		
33	Work metal with portable drill					X		X
* 34	Lay out geometric forms	X		X		X		X
* 35	Make material lists	X	X	X	X	X	X	X
36	Fabricate jigs using surface plates					X		X
37	Repair/modify jigs using surface plates					X		X
38	Fabricate special tools					X		X
39	Repair/modify special tools					X		X
40	Fabricate fixtures					X		X
41	Repair/modify fixtures					X		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO	GRINDER OPERATOR	DRILL PRESS OPERATO	MILLING MACHINE OPERATOR	LATHE OPERATOR	MACHINIST	NC OPERATOR	EDM OPERATOR
		DOT NO.	603.280-038	606.682-014	605.685-030	604.685-026	600.280-022	**	**
42	Set-up oxyacetylene equipment						X		X
* 43	Test metals for hardness using file		X		X		X		X
	DUTY B -- Setting Up and Operating Lathes								
* 1	Align lathe centers and mount work					X	X	X	X
* 2	Bore, counterbore and countersink holes with lathe					X	X	X	X
* 3	Cut tapers with a lathe					X	X	X	X
* 4	Cut threads with a lathe					X	X	X	X
* 5	Face with a lathe					X	X	X	X
* 6	File workpiece on a lathe					X	X	X	X
* 7	Perform spinning operation on lathe					X	X	X	X
* 8	Ream holes with lathe					X	X	X	X
* 9	Rechase threads with lathe					X	X	X	X
* 10	Cut (rough & finish) with lathe					X	X	X	X
* 11	Knurl with lathe					X	X	X	X
* 12	Set up and perform lathe operation from blueprint					X	X	X	X
* 13	Tap threads on lathe with hand taps					X	X	X	X
* 14	Set up and grind with tool post grinder					X	X		
* 15	Perform necessary maintenance for lathe					X	X	X	
* 16	Install lathe holding device					X	X	X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY ____________

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	GRINDER OPERATOR	DRILL PRESS OPERATOR	MILLING MACHINE OPERATOR	LATHE OPERATOR	MACHINIST	NC OPERATOR	EDM OPERATOR
	DOT NO.	603.280-038	606.682-014	605.685-030	604.685-026	600.280-022	**	**
TASK NO.	TASK NAME							
* 17	Compute feeds and speeds				X	X	X	X
* 18	Set up feeds and speeds				X	X	X	X
* 19	Compute double depth of threads				X	X	X	X
* 20	Compute tapes				X	X	X	X
* 21	Turn eccentric on lathe				X	X	X	X
* 22	Use dial indicator to set up working for jaw chuck				X	X	X	X
* 23	Turn groove on a lathe				X	X	X	X
* 24	Cut champer on lathe				X	X	X	X
* 25	Cut internal threads with lathe				X	X	X	X
	DUTY C -- Operating Horizontal and Vertical Milling Machine							
* 1	Select and mount work and work holding device			X		X	X	X
* 2	Select and mount cutter and cutter holding device			X		X	X	X
* 3	Align milling machine fixtures and attachments			X		X	X	X
* 4	Bore with milling machine			X		X	X	X
* 5	Cut external slots with milling machine			X		X	X	X
* 6	Cut internal slots with milling machines			X		X	X	X
* 7	Mill angles			X		X	X	X
* 8	Mill external radii			X		X	X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	GRINDER OPERATOR 603.280-038	DRILL PRESS OPERATO 606.682-014	MILLING MACHINE OPERATOR 605.685-030	LATHE OPERATOR 604.685-026	MACHINIST 600.280-022	NC OPERATOR **	EDM OPERATOR **
		DOT DESCRIPTIO / DOT NO.						
* 9	Mill cylindrical work			X		X	X	X
*10	Mill gears			X		X	X	X
*11	Mill with end mills			X		X	X	X
*12	Perform flycutting operations			X		X	X	X
*13	Mill with form ground milling cutters			X		X	X	X
*14	Index with milling machine			X		X	X	X
*15	Cut off with milling machine			X		X	X	X
*16	Square metal with milling machine			X		X	X	X
*17	Duplicate on profile milling machine			X		X	X	X
*18	Maintain milling machine			X		X	X	X
*19	Mill a dovetail on a vertical mill			X		X	X	X
*20	Gang mill on a horizontal mill			X		X	X	X
	DUTY D -- Operating Shaper, Planer and Slotter							
* 1	Clean and lubricate shaper/slotter			X		X		X
* 2	Grind or sharpen tool bit for shaper/slotter			X		X		X
* 3	Select and mount cutting tool for shaper/slotter			X		X		X
* 4	Mount work and workholding device in shaper/slotter			X		X		X
* 5	Set and manipulate shaper/slotter controls			X		X		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	GRINDER OPERATOR	DRILL PRESS OPERATOR	MILLING MACHINE OPERATOR	LATHE OPERATOR	MACHINIST	NC OPERATOR	EDM OPERATOR
	POSSIBLE EXIT POINTS — DOT NO.	603.280-038	606.682-014	605.685-030	604.685-026	600.280-022	**	**
* 6	Shape or slot part to specification from drawing			X		X		X
* 7	Remove and inspect shaper/slotter work			X		X		X
	DUTY E -- Operating Grinding Machine							
* 1	Inspect and balance grinding wheel	X				X	X	X
* 2	Press and true grinding wheel	X				X	X	X
* 3	Part metal with grinding machine	X				X	X	X
* 4	Polish metal with grinding machine	X				X	X	X
* 5	Surface grind with grinding machine	X				X	X	X
* 6	Sharpen machine cutting tools with grinding machine	X				X		
* 7	Sharpen hard tools with grinding machine	X				X		
* 8	Grind between centers on a grinding machine	X				X	X	X
* 9	Maintain grinding machine	X				X	X	X
	DUTY F -- Operating Drill Press Machine							
* 1	Set up press to drill or ream		X			X		X
* 2	Locate and drill holes with drill press		X			X		X
* 3	Center drill and counterbore holes		X			X		X
* 4	Ream holes with drill press		X			X		X
* 5	Select and sharpen drill bits		X			X		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS						
	DOT DESCRIPTION	GRINDER OPERATOR	DRILL PRESS OPERATOR	MILLING MACHINE OPERATOR	LATHE OPERATOR	MACHINIST	NC OPERATOR	EDM OPERATOR
TASK NO.	TASK NAME / DOT NO.	603.280-038	606.682-014	605.685-030	604.685-026	600.280-022	**	**
* 6	Tap holes with drill press		X			X		X
* 7	Maintain drill press		X			X		X
* 8	Maintain and store tools and cutters		X			X		X
* 9	Sharpen cutting tools		X			X		X
* 10	Set up drill press for drilling/reaming		X			X		X
* 11	Compute drill/reamer feeds and speeds		X			X		X
* 12	Lap metals with drill press		X			X		X
	DUTY G -- Operating Pedestal Grinder							
* 1	Clean and lubricate pedestal and grinder	X			X	X		X
* 2	Select and mount grinding wheel for pedestal grinder	X			X	X		X
* 3	Dress grinding wheel for pedestal grinder	X			X	X		X
* 4	Grind and sharpen tool bits on a pedestal grinder	X			X	X		X
* 5	Sharpen twist drill with grinder	X	X		X	X		X
	DUTY H -- Operating Metal Saws							
1	Cut and weld saw blades					X		X
2	Cut with power hack-saw					X		X
* 3	Straight saw with a metal band saw			X		X		X
* 4	Select, remove, replace saw blades			X		X		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	GRINDER OPERATOR 603.280-038	DRILL PRESS OPERATOR 606.682-014	MILLING MACHINE OPERATOR 605.685-030	LATHE OPERATOR 604.685-026	MACHINIST 600.280-022	NC OPERATOR **	EDM OPERATOR **
* 5	Maintain band saw			X		X		X
* 6	Contour cut on band saw			X		X		X
* 7	Angular cut on band saw			X		X		X
	DUTY I -- Performing EDM Operations							
1	Determine feasibility of EDM for given workshop					X		X
2	Make proper electrode					X		X
3	Set up EDM machine							X
4	Select proper electrical discharge circuit							X
5	Select proper method for using dilective fluid							X
6	Machine part to specification on EDM machine							X
7	Inspect and evaluate part after machining					X		X
8	Reform clean up and maintenance on EDM machine							X
	DUTY J -- Performing Numerical Control Operations							
1	Utilize proper numerical control axes						X	
2	Establish quadrant point valves						X	
3	Convert blueprint to NC measurement system						X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) MACHINE SHOP

RELATED SECONDARY CLUSTER METALS

DUTY

** No DOT Codes Currently Listed

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	GRINDER OPERATOR	DRILL PRESS OPERATOR	MILLING MACHINE OPERATOR	LATHE OPERATOR	MACHINIST	NC OPERATOR	EDM OPERATOR
	DOT DESCRIPTION DOT NO.	603.280-038	606.682-014	605.685-030	604.685-026	600.280-022	**	**
4	Select tape material						X	
5	Decipher NC tape code						X	
6	Make an NC tape with tape writer						X	
7	Set up tape reader to read tape						X	
8	Select proper NC format						X	
9	Write programs in proper NC format						X	
10	Edit NC programs						X	
11	Manually control operation of NC machine						X	
12	Set up tooling from program on NC machine					X	X	
13	Machine parts on NC machine						X	

SUMMARY OF MULTIPLE CAREER OPTIONS IN WELDING

Secondary -	Welder Helper	819.687-014
	Brazer	813.684-010
	Gas Welder	811.684-014
Post Secondary -	Welder Helper	819.687-014
	Brazer	813.684-010
	Gas Welder	811.684-014
	Arc Welder	810.304-014
	Combination Welder	819.381-010

- Task Summary -

Welder Helper. (The welder helper might perform tasks other than those listed here, under the supervision of an experienced welder.) Task #'s: A-1-3, A-11-12, A-15-16, B-1-4, C-1-2, C-11, D-1, D-14, D-16, E-1-4, E-6-13.

Brazer. Task #'s: A-1-4, A-11-14, A-16-23, E-1, E-3-4, E-6-13.

Gas Welder. Task #'s: A-1-23, D-1-19, A-1, A-3, A-5-13.

Arc Welder. Task #'s: B-1-31, C-1-19, D-1-19, E-1-13.

Combination Welder. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
WELDING

RELATED SECONDARY CLUSTER METALS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIC: WELDER HELPER DOT NO.: 819.687-014	BRAZER 813.684-010	GAS WELDER 811.684-014	ARC-WELDER 810.304-014	COMBINATION WELDER 819.384-010		
	DUTY A -- Oxyacetylene Welding							
* 1	Set up welding equipment	X	X	X		X		
* 2	Select proper welding tip	X	X	X		X		
* 3	Prepare metal for welding	X	X	X		X		
* 4	Weld outside corner joint		X	X		X		
* 5	Make beads with filler rod			X		X		
* 6	Weld a butt joint in the flat, vertical, horizontal, and overhead positions			X		X		
* 7	Weld a lap-joint in the horizontal and overhead position			X		X		
* 8	Weld tee-joints in all positions			X		X		
* 9	Cut metal with oxyacetylene equipment			X		X		
* 10	Pierce and cut holes with oxyacetylene equipment			X		X		
* 11	Set up an automatic cutting machine	X	X	X		X		
* 12	Cut metal with automatic cutting machine	X	X	X		X		
* 13	Make beads with brass rod		X	X		X		
* 14	Braze a lap joint		X	X		X		
* 15	Weld cast iron (gas equipment)	X		X		X		
* 16	Weld pipe (gas equipment)	X	X	X		X		
* 17	Braze metal with gas equipment		X	X		X		
* 18	Braze castings with gas equipment		X	X		X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
WELDING

RELATED SECONDARY CLUSTER METALS

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTIO	WELDER HELPER	BRAZER	GAS WELDER	ARC-WELDER	COMBINATION WELDER	
	DOT NO.	819.687-014	813.684-010	811.684-014	810.304-014	819.384-010	
TASK NO.	TASK NAME						
* 19	Braze ferrous metals with silver alloys		X	X		X	
* 20	Braze non ferrous metal with silver alloys		X	X		X	
* 21	Solder ferrous metals with lead alloys		X	X		X	
* 22	Solder non ferrous metal with lead alloys		X	X		X	
* 23	Solder/braze copper pipe joints		X	X		X	
	DUTY B -- Shielded Metal ARC Welding						
* 1	Select proper current for SMAW	X			X	X	
* 2	Set up SMAW equipment	X			X	X	
* 3	Strike an ARC with SMAW equipment	X			X	X	
* 4	Select proper electrode for SMAW welding	X			X	X	
5	Weld a pad of beads on heavy plate in the flat positions (SMAW)				X	X	
6	Weld a butt joint on heavy plate in the flat position (SMAW)				X	X	
7	Weld a lap joint on heavy plate in the horizontal position (SMAW)				X	X	
8	Weld a tee fillet on heavy plate in the horizontal position (SMAW)				X	X	
9	Weld a tee joint on heavy plate in the horizontal position (SMAW)				X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) WELDING

RELATED SECONDARY CLUSTER METALS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTION	WELDER HELPER	BRAZER	GAS WELDER	ARC-WELDER	COMBINATION WELDER	
		DOT NO.	819.687-014	813.684-010	811.684-014	810.304-014	819.384-010	
10	Weld a square groove butt joint on heavy plate in the horizontal position (SMAW)					X	X	
11	Weld string beads and padding on heavy plate in the vertical position (SMAW)					X	X	
12	Weld a butt joint on heavy plate in the vertical position (SMAW)					X	X	
13	Weld a single pass lap joint on heavy plate in the vertical position (SMAW)					X	X	
14	Weld a three bead tee joint on heavy plate in the vertical position (SMAW)					X	X	
15	Weld a tee fillet on heavy plate in the vertical position (SMAW)					X	X	
16	Weld string and weave beads on heavy plate in the overhead position (SMAW)					X	X	
17	Weld a square groove butt joint on heavy plate in the overhead position (SMAW)					X	X	
18	Weld a lap joint on heavy plate in the overhead position (SMAW)					X	X	
19	Weld a three bead tee joint on heavy plate in the overhead position (SMAW)					X	X	
20	Weld a square groove butt joint on heavy plate in the flat position (SMAW)					X	XX	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) WELDING

RELATED SECONDARY CLUSTER METALS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIO	WELDER HELPER	BRAZER	GAS WELDER	ARC-WELDER	COMBINATION WELDER	
	DOT NO.	819.687-014	813.684-010	811.684-014	810.304-014	819.384-010	
TASK NO.	TASK NAME						
21	Weld a multiple pass groove butt joint on heavy plate in the flat position (SMAW)				X	X	
22	Weld a three bead tee fillet on heavy plate in the vertical position (SMAW)				X	X	
23	Weld a butt joint on heavy plate in the overhead position (SMAW)				X	X	
24	Weld a three bead tee fillet joint on heavy plate in the overhead position (SMAW)				X	X	
25	Weld string beads on light gauge metal in the flat position (SMAW)				X	X	
26	Weld a square groove butt joint on light gauge metal in the flat position (SMAW)				X	X	
27	Weld a lap joint on light gauge metal in the flat position (SMAW)				X	X	
28	Weld string beads on light gauge metal in the vertical position downhill (SMAW)				X	X	
29	Weld a butt joint on light gauge metal in the vertical position downhill (SMAW)				X	X	
30	Weld a lap joint on light gauge metal in the vertical position downhill (SMAW)				X	X	
31	Test welded joints on heavy and mild steel plate				X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) WELDING

RELATED SECONDARY CLUSTER METALS

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTIO	WELDER HELPER	BRAZER	GAS WELDER	ARC-WELDER	COMBINATION WELDER	
	DOT NO.	819.687-014	813.684-010	811.684-014	810.304-014	819.384-010	
TASK NO.	TASK NAME						
	DUTY C -- System Inert Gas Welding (GTAW)						
* 1	Select proper equipment for TIG welding	X			X	X	
* 2	Set up TIG equipment to weld aluminum	X			X	X	
3	Weld stringer beads (TIG)				X	X	
4	Weld stringer beads with filler rod (TIG)				X	X	
5	Weld lap joint in the flat position (TIG)				X	X	
6	Weld a butt joint in the flat position (TIG)				X	X	
7	Weld a lap joint in the vertical position (TIG)				X	X	
8	Weld butt joint in the vertical position (TIG)				X	X	
9	Weld a fillet joint in the flat position (TIG)				X	X	
10	Weld a fillet joint in the vertical position				X	X	
* 11	Set up TIG equipment to weld stainless steel						
	and mild steel	X			X	X	
12	Weld stringer beads on stainless steel all						
	positions (TIG)				X	X	
13	Weld fillet joint on horizontal position (TIG)				X	X	
14	Weld outside corner joint in flat position						
	(TIG)				X	X	
15	Weld lap joint in horizontal position (TIG)				X	X	
16	Weld lap joint in overhead position (TIG)				X	X	
17	Weld multiple pass butt joint in flat position						
	(TIG)				X	X	

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) WELDING

RELATED SECONDARY CLUSTER METALS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	WELDER HELPER	BRAZER	GAS WELDER	ARC-WELDER	COMBINATION WELDER	
DOT NO.		819.687-014	813.684-010	811.684-014	810.304-014	819.384-010	
18	Weld pipe joint in fixed position (TIG)				X	X	
19	Weld fillet tee joint in flat position (TIG)				X	X	
	DUTY D -- Gas Metal ARC Welding (MIG)						
* 1	Set up mild steel welding machine (MIG)	X		X	X	X	
* 2	Weld a butt joint in the flat position (MIG)			X	X	X	
* 3	Weld a lap joint in the horizontal position (MIG)			X	X	X	
* 4	Weld a tee fillet in the horizontal position (MIG)			X	X	X	
* 5	Weld a butt joint in the horizontal position (MIG)			X	X	X	
* 6	Weld a butt joint in the vertical position (MIG)			X	X	X	
* 7	Weld a tee joint in the vertical position (MIG)			X	X	X	
* 8	Weld a three pass tee joint in the vertical position (MIG)			X	X	X	
* 9	Weld a butt joint in the overhead position (MIG)			X	X	X	
10	Weld a multiple pass tee joint in the overhead position (MIG)				X	X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) WELDING

RELATED SECONDARY CLUSTER METALS

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS						
	DOT DESCRIPTION	WELDER HELPER	BRAZER	GAS WELDER	ARC-WELDER	COMBINATION WELDER	
TASK NO.	TASK NAME / DOT NO.	819.687-014	813.684-010	811.684-014	810.304-014	819.384-010	
* 11	Weld tee joints in the horizontal position on light gauge mild steel (MIG)			X	X	X	
* 12	Weld square groove butt joints in the flat position (MIG0			X	X	X	
* 13	Weld a single tee butt joint in the vertical position (MIG)			X	X	X	
* 14	Select proper MIG equipment and set up to weld stainless steel	X		X	X	X	
* 15	Weld joints on stainless steel (MIG)			X	X	X	
* 16	Select proper MIG equipment and set up to weld aluminum	X		X	X	X	
* 17	Weld joints on aluminum plate			X	X	X	
* 18	Select proper MIG equipment and set up to use flux colored wire for welding			X	X	X	
* 19	Weld joint using flux colored steel wire			X	X	X	
	DUTY E -- Performing General Welding Duties						
* 1	Clamp metal for welding	X	X	X	X	X	
* 2	Cut patches and repair plates	X			X	X	
* 3	Clean and maintain welding equipment	X	X	X	X	X	
* 4	Read blueprints and cut metal to size	X	X		X	X	
* 5	Read blueprints and fabricate to specifications			X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) WELDING

RELATED SECONDARY CLUSTER METALS

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	WELDER HELPER	BRAZER	GAS WELDER	ARC-WELDER	COMBINATION WELDER
	DOT DESCRIPTION DOT NO.	819.687-014	813.684-010	811.684-014	810.304-014	819.384-010
* 6	Chip slag with chipping hammer	X	X	X	X	X
* 7	Cut material with hand saws	X	X	X	X	X
* 8	Drill metal with power equipment	X	X	X	X	X
* 9	Grind metal with power equipment	X	X	X	X	X
*10	Cut metal with power hacksaws	X	X	X	X	X
*11	Wire brush with power equipment	X	X	X	X	X
*12	Finish metal surfaces with hand tools	X	X	X	X	X
*13	Shear and punch metal shapes using iron working machines	X	X	X	X	X

TRANSPORTATION

SUMMARY OF MULTIPLE CAREER OPTIONS IN AUTO BODY REPAIR

Secondary	-	Body Trimmer	780.381-010
		Auto Body Repair Helper	807.687-010
		Auto Painter Helper	845.684-014
Post Secondary	-	Body Trimmer	780.381-010
		Auto Body Repair Helper	807.687-010
		Auto Painter Helper	845.684-014
		Painter Transportation Equipment	845.381-014
		Auto Body Repairer	807.381-010

- Task Summary -

Body Trimmer. Task #'s: A-1-13, F-1-8, G-1.

Auto Body Repair Helper. (The auto body repair helper might perform tasks other than those indicated here under the direction of an experienced auto body repairer. This job title generally refers to those individuals involved in on-the-job training.) Task #'s: A-1-12, B-1, B-4, B-6, B-9, C-1, D-1-2, C-5-7, C-10, C-12, C-14, E-1-3, E-7, E-11-12, F-6, G-3.

Auto Painter Helper. Task #'s: E-1-3, E-5, E-11-12, G-3.

Painter, Transportation Equipment. Task #'s: E-1-12, G-1-3.

Auto Body Repairer. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
AUTO BODY REPAIR

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME							
	DOT DESCRIPTIO	BODY TRIMMER	AUTO BODY REPAIR HE	AUTO PAINTER HELPER	PAINTER TRANSPORTAT EQUIPMENT	AUTO BODY REPAIRER		
	DOT NO.	780.381-010	807.687-010	845.684-014	845.381-014	807.381-010		
	DUTY A -- Replacing, Adjusting and Installing Trim and Accessories							
* 1	Remove and replace doors	X	X			X		
* 2	Remove and replace grill	X	X			X		
* 3	Remove and replace locks and latches	X	X			X		
* 4	Remove and replace exterior trim	X	X			X		
* 5	Remove and replace outside mirrors	X	X			X		
* 6	Remove and replace remote control outside mirrors	X	X			X		
* 7	Remove and replace weatherstrip	X	X			X		
* 8	Remove and replace interior trip	X	X			X		
* 9	Remove and replace vinyl tops	X				X		
* 10	Remove and replace headlamps	X	X			X		
* 11	Remove and replace parking and tail light assemblies	X	X			X		
* 12	Align head lights	X	X			X		
* 13	Repair vinyl tops	X				X		
	DUTY B -- Performing Metal Working Procedures							
* 1	Repair damage by means of metal finishing		X			X		
2	Repair rust damage with fiberglass					X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AUTO BODY REPAIR

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTI: BODY TRIMMER DOT NO.: 780.381-01	AUTO BODY REPAIR H 807.687-01	AUTO PAINTER HELPE 845.684-01	PAINTER TRANSPORTA EQUIPMENT 845.381-014	AUTO BODY REPAIRER 807.381-01		
3	Repair rust damage with sheet metal					X		
* 4	Repair damage by using body filler		X			X		
5	Repair damage with body solder or lead					X		
* 6	Remove minor dents from sheet metal		X			X		
7	Remove major dents and damage from sheet metal					X		
8	Repair tears in sheet metal					X		
* 9	Repair damaged fiberglass with fiberglass		X			X		
10	Repair or replace partial weld-in panels					X		
11	Repair or replace complete weld-in panels					X		
12	Weld and cut metal with oxyacetylene equipment					X		
13	Weld and cut metal with arc welder					X		
14	Braze and heat metal with oxyacetylene equipment					X		
	DUTY C -- Aligning Body and Frame							
* 1	Repair or replace fuel tanks		X			X		
2	Check frame alignment					X		
3	Check unitized body alignment					X		
4	Straighten frames					X		
5	Straighten unitized bodies					X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AUTO BODY REPAIR

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	BODY TRIMMER	AUTO BODY REPAIR HE	AUTO PAINTER HELPER	PAINTER TRANSPORTAT EQUIPMENT	AUTO BODY REPAIRER		
	DOT NO.	780.381-010	807.687-010	845.684-014	845.381-014	807.381-010		
	DUTY D -- Replacing and Aligning Panels							
* 1	Align hood and deck panels		X			X		
* 2	Align doors		X			X		
3	Remove and replace bolt hinge doors					X		
4	Remove and replace welded hinge doors					X		
* 5	Remove and replace doors with power assemblies		X			X		
* 6	Remove and replace bolt-in fenders		X			X		
* 7	Remove and replace weld-in fenders		X			X		
8	Remove and replace bolt-in radiator supports					X		
9	Remove and replace welded radiator supports					X		
* 10	Remove and replace hoods and deck lids		X			X		
11	Remove and replace door skins					X		
* 12	Remove and replace bolt-in wheel housings		X			X		
13	Remove and replace welded wheel housings					X		
* 14	Remove and replace quarter panels and fender extensions		X			X		
15	Align quarter panels and fender extensions					X		
16	Remove and replace front end clip					X		
	DUTY E -- Painting and Refinishing							
* 1	Clean and prepare repaired surfaces for painting		X	X	X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AUTO BODY REPAIR

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINT

	DOT DESCRIPTI	BODY TRIMMER	AUTO BODY REPAIR H	AUTO PAINTER HELPE	PAINTER TRANSPORTA EQUIPMENT	AUTO BODY REPAIRER		
	DOT NO.	780.381-010	807.687-010	845.684-014	845.381-014	807.381-010		
TASK NO.	TASK NAME							
* 2	Remove paint and rust		X	X	X	X		
* 3	Mask vehicles for painting		X	X	X	X		
4	Apply anti-corrosive materials				X	X		
* 5	Apply primer			X	X	X		
6	Spot paint solid colors				X	X		
* 7	Paint solid color panels		X		X	X		
8	Paint entire vehicle				X	X		
9	Spot paint and panel paint with metallic							
	colors				X	X		
10	Heat dry painted surface				X	X		
* 11	Apply compound and polish finishes		X	X	X	X		
* 12	Clean and maintain spray guns		X	X	X	X		
	DUTY F -- Installing Glass							
* 1	Remove and replace glue-in windshields							
	and back glass	X				X		
* 2	Remove and replace stationary quarter windows	X				X		
* 3	Remove and replace rubber seals w/s and							
	back glass	X				X		
* 4	Remove and replace and adjust moving glass	X				X		
* 5	Remove, replace and adjust glass regulators	X				X		
* 6	Remove and replace windshield wiper							
	assemblies	X	X			X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AUTO BODY REPAIR

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS						
		BODY TRIMMER	AUTO BODY REPAIR HEL	AUTO PAINTER HELPER	PAINTER TRANSPORTATI EQUIPMENT	AUTO BODY REPAIRER		
TASK NO.	TASK NAME	780.381-010	807.687-010	845.684-014	845.381-014	807.381-010		
* 7	Seal leaks and glue around all types of glass	X				X		
* 8	Seal leaks in rubber seal around all types of glass	X				X		
	DUTY G -- Cost Estimating and Shop Management							
1	Estimate repair costs				X	X		
2	Determine actual cost of repairs				X	X		
* 3	Maintain and clean workplace	X	X	X	X	X		

SUMMARY OF MULTIPLE CAREER OPTIONS IN AUTO MECHANICS

Secondary	-	Auto Mechanic Helper	620.684-014
		Tune-Up Mechanic	620.281-066
		Carburetor Mechanic	620.288-034
		Brake Repairer	620.281-026
Post Secondary	-	Auto Mechanic Helper	620.684-014
		Tune-Up Mechanic	620.281-066
		Carburetor Mechanic	620.288-034
		Brake Repairer	620.281-026
		Front End Mechanic	620.281-038
		Transmission Mechanic	620.281-062
		Auto Mechanic	620.281-010

- Task Summary -

Auto Mechanic Helper. The auto mechanic helper might perform tasks other than those indicated here, under the direction of an experienced mechanic. This job title generally includes those individuals who are in on-the-job training. Task #'s: 2-3, 8, 14-15, 19-20, 22-23, 26-27, 29-30, 35-38, 40-42, 44, 46, 48, 53-56, 59-62, 64, 67, 69, 78, 100, 105, 108-110, 113, 115, 116, 120-121.

Tune-Up Mechanic. Task #'s: 1-25.

Carburetor Mechanic. Task #'s: 26-32.

Brake Repairer. Task #'s: 33-50.

Front End Mechanic. Task #'s: 51-72.

Transmission Mechanic. Task #'s: 73-95.

Auto Mechanic. Task #'s: 1-148.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
AUTO MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

DOT DESCRIPTIO

TASK NO.	TASK NAME	TUNE-UP MECHANIC	CARBURETOR MECHANIC	BRAKE REPAIRER	FRONT END MECHANIC	TRANSMISSION MECHAN	AUTO MECHANIC HELPE	AUTO MECHANIC
	DOT NO.	620.281-066	620.288-034	620.281-026	620.281-038	620.281-062	620.684-014	620.261-010
	DUTY A -- Performing Engine Tune-Up							
* 1	Locate & repair problems in electrical wiring	X						X
* 2	Service/replace batteries	X					X	X
* 3	Replace cables	X					X	X
* 4	Test engine with analyzer	X						X
* 5	Make engine adjustments from analyzer tests	X						X
* 6	Test cranking systems	X						X
* 7	Test ignition system	X						X
* 8	R & R distributor	X					X	X
* 9	Overhaul distributor	X						X
* 10	Service ignition system components	X						X
* 11	Test and service transistor ignition systems	X						X
* 12	Test D-C charging system	X						X
* 13	Test D-C regulators	X						X
* 14	R & R D-C regulators	X					X	X
* 15	R & R D-C generators	X					X	X
* 16	Overhaul D-C generator	X						X
* 17	Test A-C charging system	X						X
* 18	Test A-C regulators	X						X
* 19	Set/replace A-C regulators	X					X	X
* 20	R & R alternator	X					X	X
* 21	Overhaul alternator	X						X
* 22	R & R solenoid	X					X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
AUTO MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIO	TUNE-UP MECHANIC	CARBURETOR MECHANIC	BRAKE REPAIRER	FRONT END MECHANIC	TRANSMISSION MECHAN	AUTO MECHANIC HELPE	AUTO MECHANIC
	DOT NO.	620.281-066	620.288-034	620.281-026	620.281-038	620.281-062	620.684-014	620.261-010
TASK NO.	TASK NAME							
* 23	R & R starters	X					X	X
* 24	Overhaul starter	X						X
* 25	Service cranking system controls	X						X
	DUTY B -- Servicing and Repairing Fuel Systems							
* 1	Clean/replace carburetor		X				X	X
* 2	Clean/replace fuel filters		X				X	X
* 3	Service & adjust automatic choke		X					X
* 4	Clean or replace carburetor air cleaner		X				X	X
* 5	Test/replace fuel pump		X				X	X
* 6	Overhaul carburetor		X					X
* 7	Troubleshoot fuel systems		X					X
	DUTY C -- Servicing and Repairing Brake Systems							
* 1	Adjust hydraulic brakes			X				X
* 2	Adjust hand brakes			X				X
* 3	Bleed hydraulic brakes			X			X	X
* 4	Replace brake shoes			X			X	X
* 5	Replace disc pads			X			X	X
* 6	Grind brake drums			X			X	X
* 7	Turn disc brake rotors			X				X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AUTO MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS DOT DESCRIPTIO	TUNE-UP MECHANIC	CARBURETOR MECHANIC	BRAKE REPAIRER	FRONT END MECHANIC	TRANSMISSION MECHAN	AUTO MECHANIC HELPE	AUTO MECHANIC
	DOT NO.	620.281-066	620.288-034	620.281-026	620.281-038	620.281-062	620.684-014	620.261-010
TASK NO.	TASK NAME							
* 8	Grind brake shoes			X			X	X
* 9	Replace master cylinder			X			X	X
* 10	Replace wheel cylinder			X			X	X
* 11	Overhaul wheel cylinder			X				X
* 12	Replace disc brake calipers			X			X	X
* 13	Overhaul disc brake calipers			X				X
* 14	Replace brake power unit			X			X	X
* 15	Rebuild brake power unit			X				X
* 16	Replace brake pipes/lines			X			X	X
* 17	Perform a complete hydraulic brake overhaul			X				X
* 18	Perform a complete power brake overhaul			X				X
* 19	Inspect steering linkage & front suspension			X				X
	DUTY D -- Servicing and Repairing Front Ends							
1	Check & align front end				X			X
* 2	Balance wheels and tires				X		X	X
* 3	Mount & dismount tires				X		X	X
* 4	True tires				X		X	X
* 5	Replace shock absorbers				X		X	X
6	Adjust torsion bars				X			X
* 7	Replace torsion bars				X		X	X
* 8	Replace coil springs				X		X	X
* 9	Replace steering linkage				X		X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
AUTO MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	TUNE-UP MECHANIC	CARBURETOR MECHANIC	BRAKE REPAIRER	FRONT END MECHANIC	TRANSMISSION MECHAN	MECHANIC HELPER	AUTO MECHANIC
	DOT DESCRIPTIO	TUNE-UP MECHANIC	CARBURETOR MECHANIC	BRAKE REPAIRER	FRONT END MECHANIC	TRANSMISSION MECHAN	MECHANIC HELPER	AUTO MECHANIC
	DOT NO.	620.281-066	620.288-034	620.281-026	620.281-038	620.281-062	620.684-014	620.261-010
* 10	Replace ball joints				X		X	X
* 11	Replace control arm bushings				X		X	X
12	Adjust steering gears				X			X
* 13	R & R steering gears				X		X	X
14	Overhaul steering gears				X			X
15	Adjust power steering gears				X			X
* 16	R & R power steering units				X		X	X
17	Overhaul power steering units				X			X
* 18	Replace power steering pumps				X		X	X
19	Repair power steering pumps				X			X
20	Recondition energy absorbing steering columns				X			X
21	Repairing tilt and telescoping steering wheels				X			X
	DUTY E -- Servicing and Repairing							
	Transmissions and Rear Ends							
1	Adjust clutches					X		X
2	Replace clutch					X		X
3	Repair hydraulic clutch					X		X
4	Lubricate speedometer cables & housing					X		X
5	Replace speedometer cable & housing					X		X
* 6	Replace universal joint					X	X	X
7	Adjust shift linkage on manual transmission					X		X
8	R & R manual transmission					X		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
AUTO MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIO	TUNE-UP MECHANIC	CARBURETOR MECHANIC	BRAKE REPAIRER	FRONT END MECHANIC	TRANSMISSION MECHAN	AUTO MECHANIC HELPE	AUTO MECHANIC
	DOT NO.	620.281-066	620.288-034	620.281-026	620.281-038	620.281-062	620.684-014	620.261-01
TASK NO.	TASK NAME							
9	Rebuild manual transmission					X		X
10	Repair rear suspension system					X		X
11	R & R differential					X		X
12	Rebuild differential					X		X
13	Replace rear-axle bearings					X		X
14	Adjust rear-axle bearings					X		X
15	Replace front drive axle assemblies					X		X
16	Repair front drive axle assemblies					X		X
17	Clean and service automatic transmission					X		X
18	Adjust modulators					X		X
19	Replace modulators					X		X
20	R & R automatic transmission					X		X
21	Replace torque converters					X		X
22	Inspect/replace front pump & seal					X		X
	DUTY F -- Performing Engine Overhaul							
1	Test engine mechanical condition							X
2	Remove engine/install heal gasket							X
3	Adjust valves							X
4	Overhaul cylinder head							
5	Disassemble engine & inspect parts							X
* 6	R & R oil pan						X	X
7	Replace main bearing							X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
AUTO MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	TUNE-UP MECHANIC	CARBURETOR MECHANIC	BRAKE REPAIRER	FRONT END MECHANIC	TRANSMISSION MECHANI	AUTO MECHANIC HELPER	AUTO MECHANIC
	DOT NO.	620.281-066	620.288-034	620.281-026	620.281-038	620.281-062	620.684-014	620.261-010
TASK NO.	TASK NAME							
8	Replace connecting rods & bearings							X
9	Replace pistons							X
10	Replace piston rings and pins							X
* 11	R & R oil pump						X	X
12	Replace engine mounts							X
13	Install engine							X
* 14	R & R exhaust manifold						X	X
* 15	Replace mufflers						X	X
* 16	Replace tailpipe assemblies						X	X
17	Replace fly wheels							X
18	Service cooling system							X
* 19	Replace & adjust fan belts						X	X
20	R & R radiator							X
* 21	Replace coolant hose						X	X
* 22	Replace water pump						X	X
23	Test/replace thermostat							X
24	Test/replace heat sensors							X
25	Service engine lubrication system							X
* 26	Lubricate chassis						X	X
* 27	Repack wheel bearings						X	X
28	R & R wheel bearings							X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AUTO MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	TUNE-UP MECHANIC	CARBURETOR MECHANIC	BRAKE REPAIRER	FRONT END MECHANIC	TRANSMISSION MECHAN	AUTO MECHANIC HELPE	AUTO MECHANIC
	DOT DESCRIPTIO / DOT NO.	620.281-066	620.288-034	620.281-026	620.281-038	620.281-062	620.261-014	620.261-010
	DUTY G -- Servicing and Repairing Emission Control System							
1	Test/service PCV system							X
2	Test/service TAC system							X
3	Test/service AIR system							X
4	Test/service FEC system							X
5	Test/service EGH system							X
6	Test/service emission control system							X
	DUTY H -- Servicing and Repairing Heating and AC System and Accessories							
1	Repair or replace horns							X
2	Repair or replace windshield wiper motor							X
3	Test/replace power window motor & control							X
4	Test/replace power seat motor or control							X
5	Repair or replace instruments and gauges							X
6	Repair or replace circulating fan							X
7	Repair or replace heater control unit							X
8	Repair or replace heater core							X
* 9	Recharge air conditioner						X	X
10	Install/add on air conditioning							X
11	Replace air conditioning compressors							X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
AUTO MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO DOT NO.	TUNE-UP MECHANIC 620.281-066	CARBURETOR MECHANIC 620.288-034	BRAKE REPAIRER 620.281-026	FRONT END MECHANIC 620.281-038	TRANSMISSION MECHAN 620.281-062	AUTO MECHANIC HELPE 620.261-014	AUTO MECHANIC 620.261.010
12	Replace condenser unit in A/C								X
13	Replace evaporator in A/C units								X
14	Replace lines in A/C units								X
15	Replace refrigerant hoses in A/C units								X
16	Replace compressor seals								X
17	Overhaul air conditioning compressor								X
18	Test air conditioner performance								X
19	Test & service air conditioning controls								X
20	Repair heat/air conditioning system								X

SUMMARY OF MULTIPLE CAREER OPTIONS IN AVIATION MECHANICS

Secondary -	Air Frame & Power Plant Mechanic Helper (An aviation mechanics program does not presently list at the secondary level.)	621.684-010
Post Secondary -	Air Frame & Power Plant Mechanic Helper	621.684-010
	Mechanic, Aircraft Accessories	621.381-014
	Mechanic, Field & Service	621.281-026
	Air Frame & Power Plant Mechanic	621.281-014

- Task Summary -

Air Frame & Power Plant Mechanic Helper. Task #'s: A-5-9, A-12-14, A-16-17, A-19-22, A-27-29, A-30-31, C-6, C-26, D-6-8, D-10, D-15, D-27, E-3, E-14, E-21.

Mechanic, Aircraft Accessories. Task #'s: A-1-9, A-12-18, A-20-31, C-6, C-9-10, C-13-14, C-16, C-21, C-23, C-26-28, E-2, E-5, E-16, E-20.

Mechanic, Field & Service. Task #'s: A-1-31, B-1, B-3, B-6, B-8, C-2-6, C-8, C-11-12, C-15-20, C-22, C-24-27, D-1-16, D-22-28, E-1, E-3-4, E-6-15, E-17, E-19, E-21-27.

Air Frame & Power Plant Mechanic. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)

AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS					
	DOT DESCRIPTIO	AIR-FRAME & POWER-PL MECHANIC HELPER	MECHANIC, AIRCRAFT ACCESSORIES	MECHANIC, FIELD & SERVICE	AIR-FRAME & POWER-PL MECHANIC		
	DOT NO.	621.684-010	621.381-014	621.281-026	621.281-014		
	DUTY A -- Applying General Technical						
	Knowledge and Skill						
1	Measure capacitance and inductance		X	X	X		
2	Calculate and measure electrical power		X	X	X		
3	Measure voltage, current, resistance,						
	continuity, and leakage		X	X	X		
4	Determine the relationship of voltage current						
	and resistance in electrical circuits		X	X	X		
* 5	Read and interpret electrical circuit						
	diagrams	X	X	X	X		
* 6	Inspect and service batteries	X	X	X	X		
* 7	Use drawings, symbols, and schematic diagrams	X	X	X	X		
* 8	Draw sketches of repairs and alterations	X	X	X	X		
* 9	Use blueprint information	X	X	X	X		
* 10	Weight aircraft	X		X	X		
11	Perform complete weight-and-balance check						
	and record data			X	X		
* 12	Fabricate and install rigid and flexible						
	fluid lines and fitting	X	X	X	X		
* 13	Identify and select appropriate nonde-						
	structive testing methods	X	X	X	X		
* 14	Perform penetrant, chemical etching, and						
	magnetic particle inspections	X	X	X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	AIR-FRAME & POWER-PL MECHANIC HELPER	MECHANIC, AIRCRAFT ACCESSORIES	MECHANIC, FIELD & SERVICE	AIR-FRAME & POWER-PL MECHANIC		
	DOT NO.	621.684-010	621.381-014	621.281-026	621.281-014		
15	Perform basic heat-treating processes		X	X	X		
* 16	Identify and select aircraft hardware and materials	X	X	X	X		
* 17	Inspect and check welds	X	X	X	X		
18	Perform precision measurements		X	X	X		
* 19	Start, ground, operate, move, service and secure aircraft	X		X	X		
* 20	Identify and select fuels	X	X	X	X		
* 21	Identify and select cleaning materials	X	X	X	X		
* 22	Perform aircraft cleaning and corrosion control	X	X	X	X		
23	Extract roots and raise numbers to a given power		X	X	X		
24	Determine areas and volumes of various geometrical shapes		X	X	X		
25	Solve ratio, proportion, and percentage problems		X	X	X		
26	Perform algebraic operations involving addition, subtraction, multiplication, and devision of positive and negative numbers		X	X	X		
* 27	Write descriptions of aircraft condition and work performed	X	X	X	X		

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	AIR-FRAME & POWER-PL MECHANIC HELPER 621.684-010	MECHANIC, AIRCRAFT ACCESSORIES 621.381-014	MECHANIC, FIELD & SERVICE 621.281-026	AIR-FRAME & POWER-PL MECHANIC 621.281-014			
		DOT DESCRIPTION / DOT NO.						
* 28	Complete required maintenance forms, records, and inspection reports	X	X	X	X			
* 29	Use the principles of simple machines: sound, fluid, and heat dynamics	X	X	X	X			
* 30	Select and use FAA and manufacturer's aircraft maintenance specifications, data sheets, manuals, and publications, and related Federal Aviation Regulations	X	X	X	X			
* 31	Read technical data	X	X	X	X			
	DUTY B -- Maintaining Powerplant							
1	Inspect and repair 14-cylinder or larger radial engine			X	X			
2	Overhaul reciprocating engine				X			
3	Inspect, check, service, and repair opposed and radial engines and reciprocating engine installations			X	X			
4	Install, troubleshoot, and remove reciprocating engines				X			
5	Overhaul turbine engine				X			
6	Inspect, check, service, and repair turbine engines and turbine engine installations			X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS						
	DOT DESCRIPTION	AIR-FRAME & POWER-PLA MECHANIC HELPER	MECHANIC, AIRCRAFT ACCESSORIES	MECHANIC, FIELD & SERVICE	AIR-FRAME & POWER-PLA MECHANIC			
	DOT NO.	621.684-010	621.381-014	621.281-026	621.281-014			
7	Install, troubleshoot, and remove turbine engines				X			
8	Perform powerplant conformity and airworthiness inspections			X	X			
	DUTY C -- Maintaining Powerplant Systems Components							
1	Troubleshoot, service, and repair fluid rate-of-flow indicating systems				X			
2	Inspect, check, service, troubleshoot, and repair engine temperature, pressure, and r.p.m. indicating systems			X	X			
3	Inspect, check, service, troubleshoot, and repair engine fire detection and extinguishing systems			X	X			
4	Repair engine electrical system components			X	X			
5	Install, check, and service engine electrical wiring, controls, switches, indicators, and protective devices			X	X			
* 6	Identify and select lubricants	X	X	X	X			
7	Repair engine lubrication system components				X			
8	Inspect, check, service, troubleshoot, and repair engine lubrication systems			X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS						
	DOT DESCRIPTION	AIR-FRAME & POWER-PLA MECHANIC HELPER	MECHANIC, AIRCRAFT ACCESSORIES	MECHANIC, FIELD & SERVICE	AIR-FRAME & POWER-PLA MECHANIC			
	DOT NO.	621.684-010	621.381-014	621.281-026	621.281-014			
9	Overhaul magneto and ignition harness		X		X			
10	Repair engine ignition system components		X		X			
11	Inspect, check, service, troubleshoot, and repair reciprocating and turbine engine ignition systems			X	X			
12	Inspect, check, and service water injection systems			X	X			
13	Overhaul carburetor		X		X			
14	Repair engine fuel metering system components		X		X			
15	Inspect, check, service, troubleshoot, and repair reciprocating and turbine engine fuel metering systems			X	X			
16	Repair engine fuel system components		X		X			
17	Inspect, check, service, troubleshoot, and repair engine fuel systems			X	X			
18	Inspect, check, troubleshoot, service, and repair engine ice and rain control systems			X	X			
19	Inspect, check, service, and repair heat exchangers and superchargers			X	X			
20	Inspect, check, service, and repair carburetor air intake and induction manifolds			X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	AIR-FRAME & POWER-PLA MECHANIC HELPER	MECHANIC, AIRCRAFT ACCESSORIES	MECHANIC, FIELD & SERVICE	AIR-FRAME & POWER-PLA MECHANIC			
DOT NO.		621.684-010	621.381-014	621.281-026	621.281-014			
21	Repair engine cooling system components		X		X			
22	Inspect, check, troubleshoot, service, and repair engine cooling systems			X	X			
23	Repair engine exhaust system components		X		X			
24	Inspect, check, troubleshoot, service, and repair engine exhaust systems			X	X			
25	Inspect, check, service, and repair propeller synchronizing and ice control systems			X	X			
* 26	Identify and select propeller lubricants	X	X	X	X			
27	Balance propellers		X		X			
28	Repair propeller control system components		X		X			
29	Inspect, check, service, and repair fixed-pitch, constant-speed, and feathering propellers, and propeller governing systems			X	X			
30	Install, troubleshoot, and remove propellers				X			
	DUTY D -- Servicing and Repairing Airframe Structure							
1	Service and repair wood structures			X	X			
2	Identify wood defects			X	X			
3	Inspect wood structures			X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	AIR-FRAME & POWER-PLAN MECHANIC HELPER 621.684-010	MECHANIC, AIRCRAFT ACCESSORIES 621.381-014	MECHANIC, FIELD & SERVICE 621.281-026	AIR-FRAME & POWER-PLAN MECHANIC 621.281-014			
DOT NO. / DOT DESCRIPTION								
4	Select and apply fabric and fiberglass covering materials			X	X			
5	Inspect, test, and repair fabric and fiberglass			X	X			
* 6	Apply trim, letters, and touch-up paint	X		X	X			
* 7	Identify and select aircraft finishing materials	X		X	X			
* 8	Apply paint and dope	X		X	X			
9	Inspect finishes and identify defects			X	X			
* 10	Install special rivets and fasteners	X		X	X			
11	Inspect bonded structures			X	X			
12	Inspect and repair plastics, honeycomb, and laminated structures			X	X			
13	Inspect, check, service and repair windows, doors, and interior furnishing			X	X			
14	Inspect and repair sheet-metal structures			X	X			
* 15	Install conventional rivets	X		X	X			
16	Hand-form, lay-out, and bend sheet metal			X	X			
17	Weld magnesium and titanium				X			
18	Solder stainless steel				X			
19	Fabricate tubular structures				X			
20	Solder, braze, gas-, and arc-weld steel				X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	AIR-FRAME & POWER-PLA MECHANIC HELPER	MECHANIC, AIRCRAFT ACCESSORIES	MECHANIC, FIELD & SERVICE	AIR-FRAME & POWER-PLA MECHANIC			
	DOT NO.	621.684-010	621.381-014	621.281-026	621.281-014			
TASK NO.	TASK NAME							
21	Weld aluminum and stainless steel				X			
22	Rig rotary-wing aircraft			X	X			
23	Rig fixed-wing aircraft			X	X			
24	Check alignment of structures			X	X			
25	Assemble aircraft			X	X			
26	Balance and rig movable surfaces			X	X			
* 27	Jack aircraft	X		X	X			
28	Perform airframe conformity and airworthiness inspections			X	X			
	DUTY E -- Servicing and Repairing Air-frame Systems Components							
1	Inspect, check, service, and repair landing gear, retraction systems, shock struts, brakes, wheels, tires, and steering systems			X	X			
2	Repair hydraulic and pneumatic power system components		X		X			
* 3	Identify and select hydraulic fluids	X		X	X			
4	Inspect, check, service, troubleshoot, and repair hydraulic and pneumatic power systems			X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS						
	DOT DESCRIPTION	AIR-FRAME & POWER-PL MECHANIC HELPER	MECHANIC, AIRCRAFT ACCESSORIES	MECHANIC, FIELD & SERVICE	AIR-FRAME & POWER-PL MECHANIC			
TASK NO.	TASK NAME / DOT NO.	621.684-010	621.381-014	621.281-026	621.281-014			
5	Repair heating, cooling, air-conditioning, pressurization, and oxygen system components		X		X			
6	Inspect, check, troubleshoot, service, and repair heating, cooling, air-conditioning, and pressurization systems			X	X			
7	Inspect, check, troubleshoot, service and repair oxygen systems			X	X			
8	Inspect, check, service, troubleshoot, and repair heading, speed, altitude, time-attitude, temperature, pressure, and position-indicating system			X	X			
9	Install instruments			X	X			
10	Inspect, check, and service auto-pilot and approach control systems				X			
11	Inspect, check, and service aircraft electronic communication and navigation systems			X	X			
12	Inspect and repair antenna and electronic equipment installations			X	X			
13	Check and service fuel dump systems			X	X			
* 14	Perform fuel management, transfer and de-fueling	X		X	X			
15	Inspect, check, and repair pressure fueling systems			X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT NO. 621.684-010 DOT DESCRIPTION AIR-FRAME & POWER-PL MECHANIC HELPER	621.381-014 MECHANIC, AIRCRAFT ACCESSORIES	621.281-026 MECHANIC, FIELD & SERVICE	621.281-014 AIR-FRAME & POWER-PL MECHANIC			
16	Repair aircraft fuel system components		X		X			
17	Inspect and repair fluid quantity indicating systems			X	X			
18	Troubleshoot, service, and repair fluid pressure and temperature warning systems				X			
19	Inspect, check, service, troubleshoot, and repair aircraft fuel systems			X	X			
20	Repair aircraft electrical system components		X		X			
* 21	Install, check, and service airframe electrical wiring, controls, switches, indicators, and protective devices	X		X	X			
22	Inspect, check, troubleshoot, service and repair alternating current and direct current electrical systems			X	X			
23	Inspect, check, and service speed- and take-off warning systems, electrical brake controls, and antiskid systems			X	X			
24	Inspect, check, troubleshoot, service, and repair landing gear position-indicating and warning systems			X	X			
25	Inspect, check, troubleshoot, service, and repair airframe ice and rain control systems			X	X			

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) AVIATION MECHANIC

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS					
	DOT DESCRIPTION	AIR-FRAME & POWER-PL MECHANIC HELPER	MECHANIC, AIRCRAFT ACCESSORIES	MECHANIC, FIELD & SERVICE	AIR-FRAME & POWER-PL MECHANIC		
TASK NO.	TASK NAME / DOT NO.	621.684-010	621.381-014	621.281-026	621.281-014		
26	Inspect, check, and service smoke and carbon monoxide detection systems			X	X		
27	Inspect, check, service, troubleshoot, and repair aircraft fire detection and extinguishing systems			X	X		

SUMMARY OF MULTIPLE
CAREER OPTIONS IN
DIESEL MECHANICS

Secondary	-	Diesel Mechanic Helper (The high school student does not train on diesel equipment. He/she should, however, have the general mechanical proficiency to perform the tasks itemized below.)	625.684-010
Post Secondary	-	Diesel Mechanic Helper Diesel Mechanic	625.684-010 625.281-010

- Task Summary -

Diesel Mechanic Helper. Task #'s: A-1-8, A-10-11, A-14-15, A-17-21, B-1-4, C-1-4, D-1-5, D-7-9, E-7, F-18-19, F-10-13, G-1-2, H-1-2, H-4-5.

Diesel Mechanic. All Tasks.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DIESEL MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME Note: R & R means Remove and Replace						
	DOT DESCRIPTION	DIESEL MECHANIC	DIESEL MECHANIC HELP				
	DOT NO.	625.281-010	625.684-010				
	DUTY A -- Servicing Wheels and Brakes						
* 1	R & R wheels	X	X				
* 2	Repack wheel bearings	X	X				
* 3	R & R brake shoes	X	X				
* 4	R & R wheel cylinders	X	X				
* 5	Rebuild wheel cylinder	X	X				
* 6	Adjust brakes	X	X				
* 7	R & R master cylinder	X	X				
* 8	Rebuild master cylinder	X	X				
9	R & R power brake unit	X					
* 10	R & R hydraulic lines and hoses	X	X				
* 11	Adjust air brakes	X	X				
12	Inspect/R & R air valves	X					
13	Inspect R & R compressor	X					
* 14	R & R air compressor	X	X				
* 15	Test/replace AC governor	X	X				
16	Inspect/R & R anti-skid system	X					
* 17	Inspect/R & R air chambers	X	X				
* 18	Inspect/R & R parking brake chamber	X	X				
* 19	Test air system for leaks	X	X				
* 20	Reline air brake	X	X				
* 21	R & R air valves	X	X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DIESEL MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTION: DIESEL MECHANIC DOT NO.: 625.281-010	DOT DESCRIPTION: DIESEL MECHANIC HELP DOT NO.: 625.684-010					
	DUTY B -- Servicing Steering and Suspension System							
* 1	R & R idler arm	X	X					
* 2	R & R pitman arm	X	X					
* 3	R & R leaf springs	X	X					
* 4	R & R shocks	X	X					
5	R & R king pins and bushings	X						
6	Inspect/R & R walking beams	X						
7	Inspect/R & R torque arms	X						
8	Inspect/adjust torsion bar	X						
9	R & R torsion bar	X						
10	R & R coil springs	X						
11	Inspect/R & R ball joints	X						
	DUTY C -- Servicing Exhaust System							
* 1	Inspect exhaust system	X	X					
* 2	R & R exhaust pipe	X	X					
* 3	R & R muffler	X	X					
* 4	Inspect/R & R exhaust manifold	X	X					
5	Inspect/R & R turbocharger	X						
6	Rebuild turbocharger	X						

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DIESEL MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINT

TASK NO.	TASK NAME	DOT DESCRIPT: DIESEL MECHANIC DOT NO.: 625.281-010	DOT DESCRIPT: DEISEL MECHANIC H DOT NO.: 625.684-010				
	DUTY D -- Servicing Engine Cooling System						
* 1	Pressure test cooling system	X	X				
* 2	Inspect water hoses	X	X				
* 3	R & R water pump	X	X				
* 4	Inspect/adjust belts	X	X				
* 5	R & R hoses	X	X				
6	Inspect/adjust shutter stat	X					
* 7	R & R heater core	X	X				
* 8	R & R radiator	X	X				
* 9	R & R thermostat	X	X				
	DUTY E -- Servicing Power Trains						
1	R & R manual transmission	X					
2	R & R clutch	X					
3	Rebuild manual transmission	X					
4	Inspect/R & R automatic transmission	X					
5	Rebuild automatic transmission	X					
6	Inspect/service shift mechanism	X					
* 7	Inspect/service drive shaft & u-joints	X	X				
8	R & R u-joints	X					
9	R & R single speed differential	X					
10	Rebuild single speed differential	X					
11	R & R two-speed differential	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
DIESEL MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINT

TASK NO.	TASK NAME	DOT DESCRIPT	DIESEL MECHANIC	DIESEL MECHANIC H					
		DOT NO.	625.281-010	625.684-010					
12	Rebuild shift unit		X						
13	R & R power divider		X						
14	Rebuild power divider		X						
15	R & R axles and seals		X						
16	R & R power take-off		X						
17	Rebuild power take-off		X						
*18	Adjust clutch (free play)		X	X					
*19	Check/repair flywheel		X	X					
	DUTY F -- Servicing the Electrical System								
1	Inspect/service battery		X						
2	Test/R & R starter		X						
3	Rebuild starter		X						
4	Test/R & R solenoid		X						
5	Test/R & R alternator		X						
6	Rebuild alternator		X						
7	Test/R & R generator		X						
8	Rebuild generator		X						
9	Test/R & R regulator		X						
*10	Test/R & R coil		X	x					
*11	R & R points		X	X					
*12	Test/R & R distributor		X	X					
*13	R & R spark plugs		X	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DIESEL MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIC: DIESEL MECHANIC DOT NO.: 625.281-010	DOT DESCRIPTIC: DEISEL MECHANIC HEL DOT NO.: 625.684-010					
14	Set ignition timing	X						
15	Time distributor to engine	X						
	DUTY G -- Servicing Air Conditioning							
* 1	Evacuate/charge refrigeration system	X	X					
* 2	Check system for leaks	X	X					
3	R & R refrigeration compressor	X						
4	R & R refrigeration clutch	X						
5	Inspect/R & R condensing unit	X						
6	Inspect/repair refrigeration controls	X						
7	R & R expansion valve	X						
8	R & R receiver dyer	X						
	DUTY H -- Servicing Diesel Fuel Ignition System							
* 1	Inspect/R & R fuel tank liner	X	X					
* 2	Test/adjust fuel pump	X	X					
3	Test/adjust fuel injection O.V.	X						
* 4	Test/adjust governor	X	X					
* 5	R & R fuel pump	X	X					
6	R & R fuel injector	X						
7	Rebuild fuel pump	X						
8	Rebuild fuel injector	X						

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) DIESEL MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTION	DIESEL MECHANIC	DIESEL MECHANIC HELP					
	DOT NO.	625.281-010	625.684-010					
TASK NO.	TASK NAME							
	DUTY I -- Diesel Engine Tune-Up							
* 1	Test/adjust air inductor system	X	X					
* 2	Test fuel system	X	X					
3	Adjust injector timing	X						
4	Adjust valve clearance	X						
5	Adjust fuel pressure	X						
6	Adjust control rack	X						
* 7	Check/adjust linkage for full throttle operation	X	X					
	DUTY J -- Performing Engine Overhaul							
* 1	Check engine compressor	X	X					
2	R & R engine	X						
* 3	Steam clean engine	X	X					
4	R & R intake manifold	X						
5	Inspect/R & R exhaust manifold	X						
6	R & R water manifold	X						
7	R & R clutch assembly	X						
8	R & R blower-turbo	X						
9	R & R water pump	X						
10	R & R cylinder heads	X						
11	Rebuild cylinder heads	X						
12	Rebuild water pump	X						

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
DIESEL MECHANICS

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

____

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS	
	DOT DESCRIPTION	DIESEL MECHANIC	DIESEL MECHANIC HELP
TASK NO.	TASK NAME DOT NO.	625.281-010	625.684-010
13	R & R connecting rods and pistons	X	
14	R & R sleeves	X	
15	R & R vibration damper	X	
16	R & R timing flow cover	X	
17	R & R crankshaft assembly	X	
18	R & R camshaft assembly	X	
19	Measure and check crank and cam shaft assembly with a micrometer	X	
* 20	R & R oil seals	X	X
* 21	R & R freeze plugs	X	X

SUMMARY OF MULTIPLE CAREER OPTIONS IN SMALL ENGINE MECHANICS

Secondary	-	None (While a number of small engine repair tasks may be mastered by secondary students, these tasks are generally not sufficient to prepare a student for either of the job titles listed for this area by the DOT.)	
Post Secondary	-	Power Saw Mechanic	025.281-030
		Small Engine Mechanic	625.281-034

- Task Summary -

Power Saw Mechanic. Task #'s: A-1-12, A-16, A-18-19, D-1-10, E-1-25, F-1-18, F-20-21, F-26-29, F-31-32, F-34-36, H-1-16.

Small Engine Mechanic. Task #'s: A-1-19, B-1-16, C-1-11, D-1-10, E-1-25, F-1-17, F-19-36, G-1-28, F-1-8.

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

DOT DESCRIPTI

DOT NO.

TASK NO.	TASK NAME NOTE: R & R means remove and replace	POWER SAW MECHANIC 625.281-030	SMALL ENGINE MECHA 625.281-034					
	DUTY A -- Servicing, Maintaining, and Repairing Fuel Systems							
1	Troubleshoot the fuel system	X	X					
2	Remove, clean, and reinstall the fuel tank and fuel line	X	X					
3	Remove, clean, and reinstall the fuel filter system	X	X					
4	Service air cleaners	X	X					
5	Disassemble, clean, and inspect carburetor parts	X	X					
6	Install a carburetor repair kit	X	X					
7	Clean and adjust carburetor	X	X					
8	R & R carburetor	X	X					
9	Rebuild carburetor	X	X					
10	Disassemble and reassemble choke linkage	X	X					
11	Adjust carburetor throttle	X	X					
12	Adjust engine idle speed	X	X					
13	Clean and adjust air-vane governor		X					
14	Disassemble, clean and reassemble a fuel pump		X					
15	R & R fuel pump		X					
16	Check fuel cap vent	X	X					
17	Service crankcase breather		X					
18	Adjust and/or repair mechanical governor	X	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIO	POWER SAW MECHANIC	SMALL ENGINE MECHAN					
	DOT NO.	625.281-030	625.281-034					
TASK NO.	TASK NAME							
19	Adjust manual choke	X	X					
	DUTY B -- Servicing and Maintaining Charging Circuits							
1	Troubleshoot the charging circuit		X					
2	Determine wear tolerances using manufacturer guide		X					
3	Adjust cutout relay		X					
4	Adjust generator/alternator relay		X					
5	Check armature for short rising armature growler		X					
6	Lubricate generator		X					
7	Check and replace generator brushes		X					
8	Replace alternator/generator bearing		X					
9	Remove, inspect and replace belt pulley		X					
10	Replace alternator		X					
11	Replace rectifiers and diode assembly		X					
12	Check voltage regulator		X					
13	Replace fuse		X					
14	Replace wiring		X					
15	Replace regulator		X					
16	Replace alternator coil		X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: POWER SAW MECHANIC DOT NO.: 625.281-030	SMALL ENGINE MECHAN 625.281-034					
	DUTY C -- Servicing and Maintaining the Starting Circuit							
1	Check/service battery		X					
2	Charge the battery		X					
3	Remove and replace battery		X					
4	Remove, check, replace or reinstall starter brushes		X					
5	Remove and replace armature bearings		X					
6	Clean starter motor commutator		X					
7	Test armature and field windings for starts		X					
8	Test and replace solenoid		X					
9	Lubricate the starting mechanism		X					
10	Troubleshoot starting circuit							
11	Repair or replace starter		X					
	DUTY D -- Servicing and Maintaining Manual Starters							
1	Check manual starter for proper generation	X	X					
2	Remove starter from engine	X	X					
3	Check clutch for defects or wear	X	X					
4	Check friction brake for defects or wear	X	X					
5	Disassemble and clean the manual starter	X	X					
6	Rewind/adjust the spring	X	X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

	DOT DESCRIPTIO	POWER SAW MECHANIC	SMALL ENGINE MECHAN
TASK NO.	TASK NAME / DOT NO.	625.281-030	625.281-034
7	Inspect and measure internal starter parts		
	for wear	X	X
8	Lubricate the manual starting mechanism	X	X
9	Replace clutch	X	X
10	Reassemble and replace starter	X	X
	DUTY E -- Servicing, Maintaining, and		
	Repairing the Ignition System		
1	Remove, test, clean, and adjust the spark plug	X	X
2	Troubleshoot the ignition system	X	X
3	R & R and the fly-wheel	X	X
4	Remove and inspect points	X	X
5	Remove plunger and measure wear	X	X
6	Measure plunger guide	X	X
7	Test/R & R condenser	X	X
8	Replace and adjust points	X	X
9	Adjust armature air gap	X	X
10	Test on ignition armature	X	X
11	Remove, test, and replace coil	X	X
12	R & R magnete plate	X	X
13	Test and replace or reinstall solid state		
	breakerless magnetron	X	X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

		POSSIBLE EXIT POINTS	
	DOT DESCRIPTION	POWER SAW MECHANIC	SMALL ENGINE MECHANI
	DOT NO.	625.281-030	625.281-034
TASK NO.	TASK NAME		
14	Test and replace or reinstall solid state capacitor discharge	X	X
15	Remove, test and replace ignition wires	X	X
16	Time the ignition system	X	X
17	Measure armature resistance using an ohm meter	X	X
18	Test and replace a stator type ignition system	X	X
19	Test and replace a diode rectifier	X	X
20	Test and replace a switch box (Pulse-Pak)	X	X
21	Test and replace a high output coil	X	X
22	Replace sensor	X	X
23	Replace safety switch	X	X
24	Replace change coils	X	X
25	Replace times sensor assembly	X	X
	DUTY F -- Overhauling and Repairing Small Engines		
1	Check 2 cycle and 4 cycle engine blocks for leaks	X	X
2	R & R oil sump		X
3	Check/R & R pistons, rings using ring expander	X	X
4	Clean piston	X	X
5	Inspect cylinder for defects on wear	X	X
6	Ridge ream top of cylinder		X

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: POWER SAW MECHANIC DOT NO.: 625.281-030	SMALL ENGINE MECHAN 625.281-034				
7	Inspect cylinder for head cracks	X	X				
8	Remove correcting rods and inspect for wear or warpage	X	X				
9	Remove, inspect, and replace or reinstall correcting rod bearings or inserts	X	X				
10	Measure rod-bearing	X	X				
11	Remove, inspect, and replace or reinstall main bearings	X	X				
12	Remove, inspect, and replace or reinstall crankshaft	X	X				
13	Measure crankshaft and mainbearing wear	X	X				
14	Measure ring wear using a standard ring and feeler gauge	X	X				
15	Free stuck rings	X	X				
16	Replace rings	X	X				
17	Remove piston pin bushings and locks	X	X				
18	Remove and replace needle bearings	X					
19	Remove, inspect and repair or reinstall a camshaft		X				
20	Remove and inspect oil seals	X	X				
21	Remove and inspect valves for warpage or wear	X	X				
22	Grind valves to specifications		X				
23	Grind or replace valve seats		X				

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ____________________

*DENOTES SECONDARY EXPECTANCY

	POSSIBLE EXIT POINTS — DOT DESCRIPTIO	POWER SAW MECHANIC	SMALL ENGINE MECHAN					
	DOT NO.	625.281-030	625.281-034					
TASK NO.	TASK NAME							
24	Lap valves		X					
25	Inspect and replace valve stem guides		X					
26	Tie or otherwise secure connecting rod bolts	X	X					
27	Repair damaged threads	X	X					
28	Clean engine parts	X	X					
29	Install a piston in a cylinder	X	X					
30	Align timing marks on crankshaft and camshaft		X					
31	Remove and clean muffler on a 2 or 4 cycle engine	X	X					
32	Check crankshaft end play	X	X					
33	Bore engine cylinder		X					
34	Deglaze cylinder	X	X					
35	Replace short block	X	X					
36	Remove and replace connecting rod	X	X					
	DUTY G -- Servicing and Repairing Lawnmower Chassis							
1	Adjust clutch control rod		X					
2	Adjust height of cut		X					
3	Adjust reel and bed knife		X					
4	Align reel-type mower		X					
5	Adjust reel bearings		X					
6	Grind bed knife		X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIO: POWER SAW MECHANIC DOT NO.: 625.281-030	SMALL ENGINE MECHAN 625.281-034					
7	Grind reel		X					
8	Grind or replace blade		X					
9	Inspect drive pulley		X					
10	Replace idle pulley		X					
11	Inspect drive roller		X					
12	Inspect mower for wear		X					
13	Lubricate a mower		X					
14	Select proper V-Belt and replace using manufacturer's specification		X					
15	Inspect and repair drive assembly		X					
16	Inspect and repair brake assembly		X					
17	Inspect and repair or replace clutch assembly		X					
18	Inspect and repair steering assembly		X					
19	Repair riding mower transmission		X					
20	Repair hydrostatic transmission and rear end		X					
21	Inspect cutter deck for damage		X					
22	Inspect and repair wheel bearings		X					
23	Adjust belt tension		X					
24	Replace wheels		X					
25	Replace chains		X					
26	Repair tires		X					
27	Replace wheel studs		X					
28	Replace handles		X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY)
SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY ______________________

*DENOTES SECONDARY EXPECTANCY

POSSIBLE EXIT POINTS

TASK NO.	TASK NAME	DOT DESCRIPTIC POWER SAW MECHANIC DOT NO. 625.281-030	SMALL ENGINE MECHAN 625.281-034					
	DUTY H -- Servicing and Maintaining Chain Saw Assembler							
1	Adjust chain saw chain	X						
2	Troubleshoot cutter problem	X						
3	Check cutting depth with gauge	X						
4	Remove chain from bar and clean	X						
5	Lubricate chain and roller nose bar	X						
6	Inspect bar assembly and sprockets for wear	X						
7	Use straight edge to check worn bar rails	X						
8	Replace roller side plates	X						
9	Replace broken drive link	X						
10	Replace roller on a bar	X						
11	Select proper stone, file and sharpen chain	X						
12	Select proper oil for chain from charts	X						
13	Service solid nose and roller nose bars	X						
14	Check/replace oiler	X						
15	Replace sprocket	X						
16	Adjust and/or replace chain and chain guide	X						
	DUTY I -- Welding and Cutting Metals							
1	Select proper welding rods and equipment		X					
2	Set up an oxyacetylene welder		X					
3	Cut metal using oxyacetylene torch		X					

TASK LISTING BY DOT CODE

OCCUPATIONAL AREA (POST-SECONDARY) SMALL ENGINES

RELATED SECONDARY CLUSTER TRANSPORTATION

DUTY

*DENOTES SECONDARY EXPECTANCY

TASK NO.	TASK NAME	POSSIBLE EXIT POINTS DOT DESCRIPTIO DOT NO.	POWER SAW MECHANIC 625.281-030	SMALL ENGINE MECHAN 625.281-034					
4	Select welding and cutting tips			X					
5	Weld by oxyacetylene method			X					
6	Clean cutting and welding tips			X					
7	Weld steel using an electric welder			X					
8	Remove a frozen pulley or collar using a heating head			X					

APPENDIX A

OVERVIEW OF COMPETENCY-BASED EDUCATION

Occupational or task analysis is a fundamental process used to develop competency-based systems of vocational instruction. The following is an overview of CBI.

Today educators once more are wondering how to respond to current societal demands. One of the strongest demands is for accountability. Parents and students wonder, "What really are our teachers teaching?" "What should students be learning?" and "What should our teachers be teaching?" Out of these demands, competency-based instruction (CBI) has emerged.

Simply defined, competency-based instruction is a systematic approach to instruction, aimed at accountability, based on job-derived standards, and supported by a feedback mechanism. As such, it has certain basic components. The five major components in a competency-based learning system are (1) competencies, (2) performance objectives, (3) criterion-referenced tests, (4) delivery systems, and (5) program evaluation. Each is interrelated, and together they form the basis of a program that provides for accountability and systematic process for adjusting the program to provide for changing needs.

Identification of Competencies

Competencies are the knowledge, skills, attitudes, and judgments that will be demonstrated at a pre-determined level of proficiency before a student is recommended as a graduate of a specific program. Competencies grow out of the needs of individual students, employers, the community and society, and they provide evidence of the application of knowledge, skill, and judgment in one's daily life. They give direction to the development of courses or units of learning; they are the unifying factor among courses; in a program they prescribe the development of performance objectives for each course.

Performance Objectives

Performance objectives are statements of educational intent that indicate the behaviors a student will demonstrate upon successful completion of a learning experience. They describe precisely what students should do to pass a module, unit, course of instruction or competency check.

Criterion-Referenced Testing

Criterion-referenced testing is the process of measuring the learner's performance as described in a performance objective and evaluating the learner as indicated in the same objective. Criterion referenced tests are written before you begin instruction. You may use them to allow students to exempt all or part of a course. They may also be used to provide students with an orientation to a course. Criterion-referenced tests permit students to know at the beginning of the course exactly what and how they will accomplish specified objectives to complete the course successfully.

Learning Strategies or Delivery Systems

A learning strategy is the process of structuring effective learning situations which will enable students to achieve specified performance objectives. Therefore, in a competency-based program, the emphasis in each learning activity, teaching strategy, or "method" is directed toward helping students to learn a pre-specified objective. One of the major research findings on teaching and learning is that a variety of materials, processes, and learning modes works better for most learners than using a single process for each individual or for a class.

Follow-up and Evaluation

Follow-up is the procedure used to increase or reinforce the effectiveness of previous action. There are no "unique" processes that have been developed to be used exclusively in a competency-based program for follow-up and evaluation. The design of program evaluation, however should consist of at least two processes: (1) gathering formative evaluation data periodically from students and faculty, and (2) following up students as they demonstrate competencies on the job.

Implementing a CBI System

In order to incorporate the principles of competency-based instruction into a vocational course or program, certain activities must be accomplished. The following chart presents a development model. (The preceding overview was developed from the article by Calhoun (1979) cited in the bibliography, by permission of the author.)

Phase 1: Determine Content	Phase 2: Plan for Instruction	Phase 3: Implement Instruction
1.1. Determine occupational tasks	2.1. Develop enabling objectives and measures	3.1. Develop lesson plans
1.2. Analyze tasks	2.2. Specify supporting skills and knowledges	3.2. Select/develop student materials
1.3. Develop performance objectives	2.3. Select methods and media	3.3. Conduct mainstream validation
1.4. Develop criterion-referenced measures	2.4. Plan student activities	3.4. Adapt validated instruction to special needs
1.5. Organize instructional sequence		3.5. Set up system of accountability

The model above contains a summary of those activities necessary for complete development of competency-based instruction in vocational programs. Modification of existing programs will not necessarily require completion of all activities, since some might have already been accomplished. It is the purpose of this Curriculum Development Guide for competency based instruction, to define the portion of the developmental model above which is essentially research based. That is, the determination and developing of tasks performed by workers actively employed in a particular occupation.

Description of Phase 1 Activities

The first phase consists of five major activities, the end product of which is an organized instructional sequence. This phase is addressed by material contained in this book.

Phase 1.1 and 1.5 have been accomplished herein. Supplementary documents contain phases 1.2, 1.3, and 1.4 for selected programs only.

1.1 Determine Occupational Tasks

Occupational tasks are derived from research conducted within a specific occupation. Such research involves analyzing each occupation to determine its duties and tasks, surveying large numbers of workers to determine exactly what they are doing, and then deciding on that basis what should be included in the training.

1.2 Analyze Tasks

Once the needs of an occupation have been clearly stated in research-based tasks, each task is then further analyzed. This analysis, conducted through literature study, interviews, observations and other research procedures, is done to determine the major steps and procedures which make up each task as well as the conditions under which it is performed and the equipment it requires.

1.3 Develop Performance Objectives

Each analyzed task is next translated into a performance objective which specifies exactly what the student will do as a result of the instruction, the conditions under which it will be done, and the standard of proficiency to be achieved.

1.4 Develop Criterion-Referenced Measures

For each performance objective, a measure is written which required the student to perform what is specified in each objective. This criterion-referenced measure enables the teacher to evaluate the student's performance according to the objective's standard. It also provides the instrument for validation of the instruction.

1.5 Organize Instructional Sequence

Since an occupational analysis includes a broad area of duties and tasks, each instructional program must be tailored to meet specific training requirements set up by instructional, regional or local demand. The specific instructional requirements, then, can be selected from the tasks and objectives and arranged into the desired teaching sequence.

APPENDIX B

THE RELATIONSHIPS OF DUTIES, TASKS, PERFORMANCE OBJECTIVES, AND CRITERION REFERENCED MEASURES

The following will identify the relationships between the various elements (duties, tasks, performance objectives, and criterion referenced measures) of a competency-based instructional sequence.

DUTY: Operating Grinding Machines

A duty is one of the distinct major activities involved in a job performance. It consists of a collection of related tasks accomplished by the job incumbent. The duty statement begins with an action work, most commonly the gerund (ing) form of a verb. An object or function is used with these words, i.e., "Typing office communications," "Inspecting brake systems," etc.

Suggested Uses of Duty Statements

1. Use as a basis for a functional organization of your program. It is often advantageous to organize a program in terms of what is done on the job. Since duty areas state major job activities, they can be readily grouped into clusters, blocks or large units.

2. Use to state general goals or competencies. When a program is being organized in terms of generally stated goals or competencies, the duty statements can be used to state them. Such statements encompass groupings of more specific competencies. Thus, they are used for structural purposes only.

3. Use as a guide for negotiating the work areas for cooperative training. With a list of duty statements, the coordinator can use this as a "shopping guide" to negotiate the work areas for a cooperative training plan. With the major work areas determined, they can then proceed to the specific tasks involved.

TASK: Attach and align materials for grinding operation

A task is a unit of work activity which constitutes a significant part of a duty. A combination of tasks forms logical work steps necessary to perform a duty. A task has a definite beginning and ending point in its accomplishments and generally consists of two or more definite steps.

Suggested Uses of Task Statements

1. Identify the lessons or other instructional increments within a functional organization. When a program has been organized by duty statements, the statements, arranged in the desired sequence under each duty, can be used to outline the specific lessons under each functional unit.

2. State specific competencies. If a program is organized (or being organized) in terms of competencies, the task statements may be used to state the specific competencies when duty statements are used to identify the general competencies.

3. Record student progress. Task statements may be entered on the students' progress records to reflect exactly what each student has (or has not) achieved.

4. Specify tasks for a cooperative training plan.

5. Use to certify training. If a certificate is awarded upon completion of the program (or any significant part of it) the task statement may be used to check off what each student has actually accomplished. Prospective employers, therefore, can be shown meaningful records of the students' training.

PERFORMANCE OBJECTIVE:

69. PERFORMANCE OBJECTIVE

[1]Given a diamond point dressing tool,
work-holding device, dial indicator,
feeler gauge, and micrometer caliper,
[2]attach and align materials for
general or cylindrical grinding/
polishing.
[3]Tolerance for alignment must be
+0.001"
-0.001"

A PERFORMANCE OBJECTIVE contains the following components: (1) the condition under which the student will perform, (2) the performance required of the student, and (3) a job-relevant standard for measuring successful performance of the objective. These components are illustrated above.

Suggested Uses of Performance Objectives

Performance objectives are terminal objectives; that is, they specify how and how well the student is expected to perform the tasks after the instruction. In themselves, they are not curriculum, but they can be used in revising existing curriculum or in developing new programs. Following are some of the ways in which they can be used.

1. Match with the specific goals or competencies stated in an existing program. In many programs, the intended outcomes for each unit or other division are stated as goals or competencies. For example, a goal might be stated as "Develop proficiency in cutting and shaping hari." From the catalog, then, all performance objectives dealing with shaping and cutting hair could be selected to specify the desired proficiencies.

2. Compare with existing objectives. Since much work has already been done in performance-based instruction, some programs will already have some performance objectives. Existing objectives can be edited, brought up to date or replaced by comparing them with the instructor-developed objectives.

3. Match with the identified needs for a new program. When a new program is planned it is usually based on a local needs analysis involving local business and industry, advisory committees, craft committees, instructors, workers and supervisors. The needs analysis, when completed, will indicate the specific job skills to be developed in the new program. The performance objectives (along with the tasks) can be matched with those identified skills to provide terminal objectives for the new program.

4. Use as the basis for updating and revising existing instruction. When instruction is revised, a starting point is the performance objectives. Since each performance objective specifies a terminal competency, the instruction should support it in terms of knowledges and skills to be

criterion-referenced measure to each student. Results of the measure will indicate any weaknesses and the necessary revisions.

3. Validate new instruction. When instruction has been developed or revised, the administration of the criterion-referenced measures will measure the instruction's effectiveness.

4. Use to advance students who demonstrate proficiency. Students with prior experiences should be so placed in the program to take advantage of that prior experience. Administration of the criterion-referenced measures before the instruction will make it possible to advance those students who demonstrate proficiency.

(Examples of tasks and related performance objectives and criterion-referenced measures may be found in the V-TECS material and in supplementary documents procedured by the Task Linkage Project.)

APPENDIX C

UNDERSTANDING DUTIES, TASKS AND PROCEDURAL STEPS IN COMPETENCY-BASED INSTRUCTION

The material contained in this document is a delineation of duties and tasks performed in various occupations. In utilizing these lists the terms duty, task, and step often have conflicting and ambiguous meanings for various users. Perhaps the best way to understand this relationship is by utilizing an example which will be familiar to most groups who work with this material. The illustration given below is for the job of classroom teacher.

A duty is a broad area of functional responsibility. Duties are performed through a series of tasks. A classroom teacher might have the following duties. (Remember these divisions reflect personal judgments).

A. Planning and organizing instruction

B. Presenting classroom instruction

C. Maintaining student records

D. Performing administrative activities

E. Performing purchasing functions

F. Performing extra-curricular duties

G. Participating in professional growth development activities

H. Maintaining classroom environment

Tasks associated with Duty A (above) might be as follows sequenced in order most likely performed:

A. Planning and Organizing Instruction
    1. Prepare course outline
    2. Prepare specific performance objectives

4. Prepare instructional methods for each objective

5. Develop a student measure for each course objective

6. Select appropriate materials and media

7. Develop instructional sequence for lesson presentation

8. Develop and write down daily lesson plans

9. Develop specific instructions for individual students as needed

Tasks are performed through a series of procedural steps. Procedural steps associated with Task A-1 might be:

A. 1. Prepare course outline

    a. Review other courses

    b. Decide on student needs

    c. Review available resources and material

    d. Consult with instructional supervisor

    e. Write down basic points to be covered

(These procedural steps are often called task detailing, and are not developed for tasks in this publication.)

These examples are designed to show that Duties and Tasks are simply methods for quantifying and stating units of work activity. As can be noted, the components which make up these units require the input of much professional judgment. No means of division are necessarily right or wrong. The best lists of this type are those which accurately and completely describe the work that is done on the job. Another way of saying this is that a good task list consists of those things you could observe a worker doing if you followed him/her around for a while on his/her job! This would include things done often, and things done seldom, but would be very descriptive of the actions performed by the worker.

As you can see, a task list is an action document. It is a document which specifically states to a student or an employer exactly what gets done and by whom, in the work environment.

APPENDIX D

COMPLETERS, LEAVERS AND THE CONCEPT OF MULTIPLE CAREER OPTIONS-RATIONALE

As may be interpreted from the attached federal regulations, the notion of program completer versus program leaver is tied directly to the career objective stated or implied by the student. Vocational programs are required to report a student as a leaver if a planned program leading to a career objective is not completed. Each multiple option in this document constitutes such an objective. If a student leaves after the completion of any one of these options it may at least be implied that the objective has been met. The concept of multiple career options based on a task analysis provides the validation necessary for organizing a curriculum which allows students to elect to take only a portion of an instructional sequence and still be a program completer by federal guidelines. It also allows for a program which is responsive to the unique interests, aptitudes, abilities, and time investment of individual students. An extremely important impact of such an organization is its effect upon the needs of special populations and the problems associated with setting the admission policies to vocational programs for these students which allow for their limitations without transgressing upon their abilities. The task listings which are included in this publication indicate possible exit points in these programs and the tasks necessary to reach each level. The user is encouraged to read the enclosed federal guidelines carefully and to develop a curriculum which allows students to complete at least one occupational objective or exit point within a reasonable period of time after beginning the program.

DEFINITIONS - FEDERAL

PROGRAM:

Is defined as a planned sequence of courses, services, or other educational activities designed to meet a specific VOCATIONAL OBJECTIVE.

VOCATIONAL OBJECTIVE:

Vocational objective is the intended occupational outcome of training and other preparation as stated by the individual student or implied.

COMPLETION: (Completed Program)

Means a student who finished a planned sequence of courses, services, or activities designed to meet a vocational occupational objective and which purports to teach entry-level job skills.

LEAVER:

LEAVERS Means anyone who has (1) been enrolled and has attended a program of vocational education and has left the program voluntarily before its formal completion because they have acquired sufficient entry-level skills to work in the field, and who have taken a job related to their field of training; and (2) all other leavers.

REPORTING:

Report these persons by race/ethnic group by sex, level of completion, handicap and by head count for persons who --

1) Completed more than 50% of program in which enrolled.

2) Completed 50% or less of program in which enrolled.

APPENDIX E

MODEL FOR CURRICULUM ORGANIZATION

The accompanying model illustrates graphically a design for incorporating the task-based, multiple exit point curriculum into a high school cluster program. This model contains the following essential elements:

1. At least one-quarter introductory class (one hour block is preferable) to orient the student to the training domain and to begin the development of basic knowledge and skill.

2. A student-teacher counseling session in which the student selects an option within the cluster which has the greatest potential for him/her.

3. The entry of the student into a specific task-based learning sequence which leads to identified job titles within an option available to the cluster.

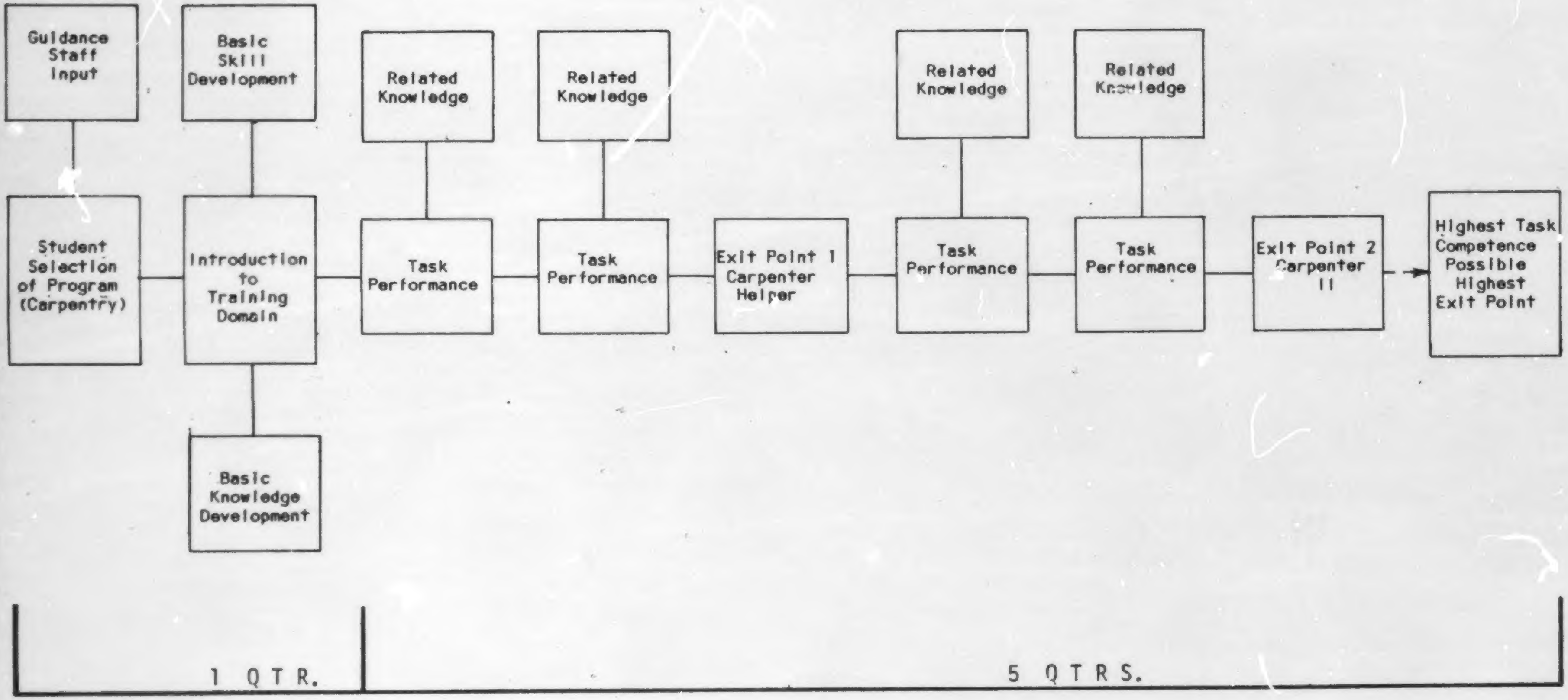
4. The provision that the student remain in the selected option until he/she completes tasks and related knowledge competence necessary for at least one of the identified exit points.

5. The option at the completion of any exit point to either: (a) continue along the same track to the limit that he/she is able to reach given his/her own investment of time, ability, and effort. (Equipment and materials limitations might play a role in setting this limit within a given program); (b) elect another option within the cluster and pursue it until a desired level of competence is reached; or (c) drop the program as a completer and enter either the job market or another training area.

The post-secondary training model also illustrated graphically, differs only in the sense that the student decides before entry which specialized program he/she wishes to ener, and progresses through a task-based system designed to develop the highest exit point competency possible. This sort of program is not concerned with clusters of occupations, but does utilize a series of multiple career options (exit points) within its training domain.

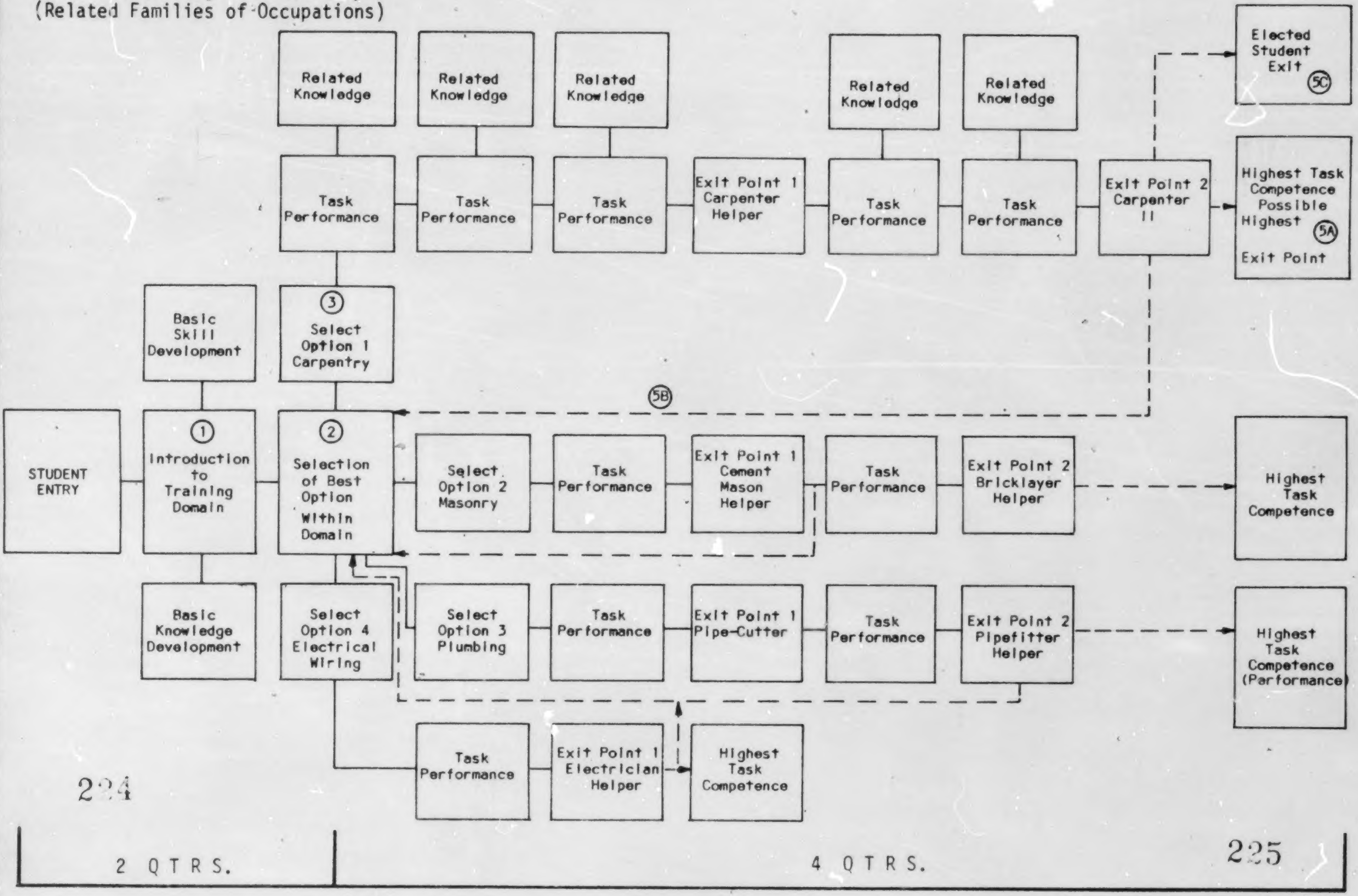
SYSTEMS DESIGN FOR TASK BASED INSTRUCTION

Specialized Post-Secondary Program
(Carpentry)


Guidance Staff Input
Student Selection of Program (Carpentry)
Basic Skill Development
Introduction to Training Domain
Basic Knowledge Development
Related Knowledge
Task Performance
Related Knowledge
Task Performance
Exit Point 1 Carpenter Helper
Related Knowledge
Task Performance
Related Knowledge
Task Performance
Exit Point 2 Carpenter II
Highest Task Competence Possible Highest Exit Point
1 QTR.
5 QTRS.

SYSTEMS DESIGN FOR TASK BASED INSTRUCTION

Construction Programs Secondary
(Related Families of Occupations)


STUDENT ENTRY
① Introduction to Training Domain
Basic Skill Development
Basic Knowledge Development
② Selection of Best Option Within Domain
③ Select Option 1 Carpentry
Related Knowledge
Task Performance
Related Knowledge
Task Performance
Related Knowledge
Task Performance
Exit Point 1 Carpenter Helper
Related Knowledge
Task Performance
Related Knowledge
Task Performance
Exit Point 2 Carpenter II
Elected Student Exit 5C
Highest Task Competence Possible Highest 5A Exit Point
5B
Select Option 2 Masonry
Task Performance
Exit Point 1 Cement Mason Helper
Task Performance
Exit Point 2 Bricklayer Helper
Highest Task Competence
Select Option 3 Plumbing
Task Performance
Exit Point 1 Pipe-Cutter
Task Performance
Exit Point 2 Pipefitter Helper
Highest Task Competence (Performance)
Select Option 4 Electrical Wiring
Task Performance
Exit Point 1 Electrician Helper
Highest Task Competence
2 QTRS.
4 QTRS.

APPENDIX F

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The following materials were obtained from the Vocational-Technical Education Consortium of States, Southern Association of Colleges and Schools and were used as background data for this project:

- Appliance Repairer
- Auto Body Repairer
- Auto Mechanic
- Bank Teller
- Bookkeeper
- Bricklayer
- Carpenter
- Cashier/Checker
- Computer Operator
- Computer Programmer
- Cosmetologist
- Dental Assistant
- Dental Laboratory Technician
- Die, Jig and Fixture Designer
- Diesel Mechanic
- Drafter
- Electronic Technician
- Emergency Medical Technician
- Legal Secretary
- Licensed Practical Nurse
- Machinist
- Medical Assistant
- Medical Lab Technician
- Plumber
- Printer
- Radio/TV Repairer
- Radiographer
- Secretary
- Small Engine Repairer
- Welder

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Title IX - Evelyn Rowe and Myra Tolbert, Coordinators
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